

# Granite School District

## Research Applications During the 2021-22 School Year

Measuring SRL differences during mathematics with SRL microanalysis

Investigator: Aliya Halterman  
 Proposal ID: TJ0027  
 Granite administrator or teacher: No  
 IRB: Utah State University  
**Status: Approved 06/04/2021**  
 Anticipated Start Date: 08/01/2021  
 Anticipated Completion Date: 12/31/2021

**Results:**

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>We were measuring differences in self-regulated learning in students with and without ADHD with a measurement tool called SRL microanalysis. This helped us to measure self-regulated learning skills in a context specific manner, in the moment that it was happening. The task that students completed was mathematics word problems. Previously, research has measured these skills with self-report questionnaires, so we wanted to measure with something that addresses some of the limitations posed by self-report questionnaires (e.g., memory unreliability, etc.).</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>We recruited 127 participants from several school districts and asked students' questions about their planning, self-monitoring, and attributions before during and after the completion of mathematics word problems</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>We found that students with ADHD used fewer strategies and made less adaptive attributions. There were no differences in their self-monitoring from students without ADHD.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This helps Granite because it informs our knowledge on how students with ADHD (which 5-10% of children have) function similarly and differently from students without ADHD regarding their SRL skills. SRL is essential for student learning and achievement, so it is important that we use this knowledge to provide proper supports to these students specifically in the areas of planning and helping students learn to attribute their failures to controllable factors rather than uncontrollable factors.</p>

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### Research Applications During the 2021-22 School Year

Genes, traits, and change over time: Curriculum research study

Investigator: Dina Drits-Esser  
 Proposal ID: 2021-001-Esser  
 Granite administrator or teacher: No  
 IRB: University of Utah  
**Status: Approved 07/06/2021**  
 Anticipated Start Date: 08/26/2021  
 Anticipated Completion Date: 05/30/2022  
 Results: (TBA)

School Pulse Panel

Investigator: Rachel Hansen  
 Proposal ID: 2021-002-Hansen  
 Granite administrator or teacher: No  
 IRB: U.S. Census Bureau  
**Status: Approved 07/06/2021**  
 Anticipated Start Date: 09/01/2021  
 Anticipated Completion Date: 08/30/2022  
 Results: (TBA)

The role of music context in high school students' translations among representation in algebra

Investigator: Danielle Divis  
 Proposal ID: 2021-003-Divis  
 Granite administrator or teacher: No  
 IRB: Utah State University  
**Status: Approved 07/20/2021**  
 Anticipated Start Date: 09/01/2021  
 Anticipated Completion Date: 04/30/2022  
 Results:

<b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?	The purpose of this study was to better understand the role that music context plays in high school students' translations among representations while engaging in music-contextualized algebra instruction.
<b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected	This study used a descriptive multiple-case study design to understand the way high school students utilize music while engaging in music-contextualized algebra tasks. Eight pairs of high school students participated in this study. The procedures included training four volunteer high school teacher-researchers to carry out three music-contextualized mathematics lessons in their own classes. Data sources for each pair included three student work samples, three audio-video recordings of class sessions, and one audio recording of a semi-structured interview. Qualitative data analysis included within- and between-cases using both open and deductive coding.
<b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.	Results from this study revealed that students utilized music during the three consecutive mathematics lessons in five distinct ways. Students used the music context (1) as a source of engagement, (2) to label mathematics, (3) to contextualize an answer, (4) to reevaluate the accuracy of answers, and (5) as a fund of knowledge to draw from. However, students did not always utilize the music context in every task problem. The quantities of each of these themes varied among the pairs, but across all pairs the most common theme was contextualizing their answers in some way, and not using music at all. The most mathematically proficient students were the most likely to contextualize their answers, and the least likely to not use the music context. However, students at all levels of mathematical proficiency were able to draw from past music experience.

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	<p>Task problems involving physical, verbal, and contextual representations were more often associated with contextualized answers than task problems involving visual and symbolic representations. The findings also showed how students translating from contextual representations engage in processes of “articulating” and “modelling.” Students translating to contextual representations from other representation types engaged in processes of “contextualizing.”</p> <p>These results are consistent with previous literature, which also shows that music context can be a source of engagement for students, and a fund of knowledge outside of class with which to connect. However, this study extends those results by providing new detail in how students use music. Students’ labeling, contextualizing answers, and reevaluating their mathematics are all new, unexpected results.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>These findings suggest that when music is purposefully integrated into mathematics lessons, there is potential for students to utilize the music context in a variety of ways. These findings are important to teachers and curriculum writers in Granite schools wishing to understand how they can create music-contextualized mathematics lessons and understand the types of connections their students might make to music during those lessons.</p> <p>First, Granite School District teachers and other educational stakeholders wishing to heighten students’ engagement in and enjoyment of mathematics should consider the potential value of music integration in high school mathematics courses.</p> <p>Second, teachers wishing to implement music-contextualized mathematics should be cognizant of the important role of students’ previous music and mathematical knowledge in the way students will utilize the music context. Teachers should make use of students’ previous knowledge and incorporate it into the lesson design.</p> <p>Third, teachers can use music context and mathematical representations together to strengthen their students’ representational fluency, which has been shown to positively affect students’ algebraic reasoning.</p> <p>Finally, teachers integrating music into their mathematics lessons who wish to maximize the number of contextual connections students make with mathematics can ensure there are problems that (1) provide contextual information, (2) explicitly require a contextualized answer, (3) work with physical representations like instruments, and (4) require them to articulate their understandings.</p>

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## Research Applications During the 2021-22 School Year

The effects of telepractice instructional coaching intervention on parents’ use of evidence-based strategies and communicative behaviors of children who use augmentative and alternative communication.

Investigator: Cheri Blue

Proposal ID: 2021-004-Blue

Granite administrator or teacher: No

IRB: University of Utah

**Status: Approved 08/30/2021**

Anticipated Start Date: 09/15/2021

Anticipated Completion Date: 02/15/2022

Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of this study was to investigate the efficacy of a telepractice coaching program that taught parents how to implement evidence-based so they could better support their children's use of augmentative and alternative communication (AAC), tools that can be used to communicate other than verbal speech. In this study the AAC that was used was a low-tech symbol communication display with pictures that represented words. We also collected data regarding how parents viewed the practicality, feasibility of the intervention activities and materials and their perspectives on the outcomes of the interventions.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>We recruited six participant dyads consisting of a child with complex communication needs (unable to functionally communicate using speech alone) and one of their parents. Recruitment ended on October 4<sup>th</sup>, 2021, and the study began on October 18<sup>th</sup>. The intervention and data collection continued until March 3<sup>rd</sup>.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>Results indicated that parents were able to quickly learn how to implement the evidence-based strategies which support the use of AAC with a high level of fidelity taught during the telepractice coaching intervention program and that they were able to sustain implementation of these strategies with high fidelity up to five weeks after their last coaching session. Also, all the children who participated in the study increased their use of the communication display to communicate when compared with their baseline performance. Parents reported that while the intervention did require a time commitment, scheduling and meeting for coaching sessions and other intervention activities was much more convenient and feasible when compared with conventional in-person therapy appointments. Parents also reported that in addition to learning how to implement the target strategies, an increased connection with their child because of scheduling consistent time to interact and communicate with their child, and their child's improved communication skills. Parents unanimously said they would recommend this intervention or a similar intervention to other parents of children with complex communication needs.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>A direct benefit to the district is that one of the children who participated in this study attends a school in the Granite District. After participating in this coaching program, the child's parents spoke to their child's teacher about using AAC at school. The school staff worked with the district's UATT team, and the child now uses an AAC app at school. The parent now feels equipped to support the use of the app at home. A more indirect benefit to the district is that this study contributes to the broader body of evidence regarding AAC and how to address barriers to its success. I hope that this information will positively influence how we as educators support students with complex communication needs.</p>

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## Research Applications During the 2021-22 School Year

Determining student writing achievement using 6+1 writing traits model.

Investigator: Brandon Schembri

Proposal ID: 2021-005-Schembri

Granite administrator or teacher: Yes

IRB: Western Governors University

**Status: Approved 08/30/2021**

Anticipated Start Date: 09/01/2021

Anticipated Completion Date: 09/11/2021

**Results:**

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of the research was to determine whether the 6+1 Writing Traits impacted student writing outcomes. Were the 6+1 Writing Traits a reliable way of teaching writing and impactful when students completed their assessments? This research project investigated whether or not that was actually true.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>The scope of the project was 6 weeks – from planning, and implementing, to reflecting. It involved one 6<sup>th</sup> grade ELA classroom. We completed a pretest and posttest with identical writing prompts. The pretest established a baseline for data collection purposes, then the posttest was the result of several weeks of teaching. Impact was assessed by comparing the two scores and writing content. Utah Compose was the data collection tool where the pretest and posttest were completed. This was a logical choice because student essays are already assigned a grade through a matrix unique to Utah Compose. The trick was to adapt the scores to accurately reflect PBL and state standards. However, the writing traits are not far from state and PBL expectations.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I knew that the 6+1 Writing Traits were “a thing”. Teachers recommended it when I began teaching. Elementary school teachers especially praised its usefulness. So, I expected Utah Compose and the 6+1 Writing Traits to be somewhat valid and valuable (why else would they create a program with the 6+1 Writing Traits integrated in!). But how valuable and for higher grades was part of my investigation. The findings did confirm that the 6+1 Writing Traits were effective. It gave student compartments, areas of focus to analyze and incorporate into their writing. Writing in and of itself is a tricky beast. And to teach it even trickier, one could argue. So, the Traits helped students visualize and compartmentalize writing. Findings show that the Traits did not, however, drastically change student writing behaviors and by extension their overall achievement. Numerous studies have shown the effectiveness of the Writing Traits and its usefulness in Higher Education. So, yes, there were improvements, but it did little to move the bottom line of students. Much of the impact occurred with mid to high level students.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>I can see this benefitting Granite School District by promoting, encouraging, and updating the Utah Compose platform and making it a go-to tool for ELA, ELL, or other literacy-based disciplines. Using and implementing Utah Compose and the 6+1 Writing Traits can only benefit all stakeholders – parents, teachers, students, admin, etc.... The data is quick and reliable and informs both teachers and students. Adjacent to this recommendation, is the pressing need to teach exactly what the 6+1 Writing Traits are. Incorporating the traits into a lesson, as scaffolding, or establishing basic fundamentals it is valuable to students. And not only 6<sup>th</sup> graders, but it has relevance in high school settings as well. I can see this program/model benefitting new teachers, APPLE teachers, or seasoned teachers. The benefits are numerous.</p>

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### Research Applications During the 2021-22 School Year

#### Developing and enacting case scenarios to bridge the pre-service/in-service teacher divide

Investigator: Lauren Barth-Cohen  
Proposal ID: 2021-006-Barth-Cohen  
Granite administrator or teacher: No  
IRB: University of Utah  
**Status: Approved 09/28/2021**  
Anticipated Start Date: 10/01/2021  
Anticipated Completion Date: 10/01/2022  
Results: (TBA)

#### Exploring teacher collaboration and instructional decisions in elementary mathematics

Investigator: Laurel Dias  
Proposal ID: 2021-007-Dias  
Granite administrator or teacher: No  
IRB: University of Utah  
**Status: Approved 09/28/2021; Addendum: 11/30/2021**  
Anticipated Start Date: 09/07/2021  
Anticipated Completion Date: 05/28/2022  
Results: (TBA)

#### Technology-enhanced eating and activity study for children's health (TEACH)

Investigator: Yang Bai  
Proposal ID: 2021-008-Bai  
Granite administrator or teacher: No  
IRB: University of Utah  
**Status: Denied 09/28/2021**

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## Research Applications During the 2021-22 School Year

The impact of primary source strategies on 5<sup>th</sup> grade students' performance in social studies

Investigator: Steven Thomas

Proposal ID: 2021-009-Thomas

Granite administrator or teacher: Yes

IRB: Western Governors University

**Status: Approved 08/31/2021**

Anticipated Start Date: 09/01/2021

Anticipated Completion Date: 09/10/2021

**Results:**

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The lack of high-quality social studies materials has left educators scrambling for ways to effectively ensure that their students achieve a full understanding of their required curriculum. Prior research has shown that students can grasp primary sources. I attempted to discover what impact primary sources would have on student's understanding of the causes of the American Revolution.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This study utilized quantitative action research as its design philosophy. The study was conducted by myself in my classroom. I introduced primary sources to students while simultaneously attempting to determine what impact my instruction had on my students. They were given a pre-test, introduced to the topic, and then given a post-test to determine what impact the primary sources had on their understanding of the American Revolution.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The post-test results showed that the average of the students' scores went up by over 20% after primary sources were used in the classroom. The median score for all tests also went up by 20% from pre to post-test. This data shows that primary sources helped students understand what led to the American Revolution.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This research showcases that Granite teachers can utilize primary sources as a way to teach social studies to their students.</p>

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## Research Applications During the 2021-22 School Year

### Evaluating a DBR self-monitoring intervention for middle schoolers with ADHD

Investigator: Ashley Donham

Proposal ID:2021-010-Donham

Granite administrator or teacher: Yes

IRB: University of California Riverside

**Status: Approved 08/31/2021**

Anticipated Start Date: 11/01/2021

Anticipated Completion Date: 12/15/2021

Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The primary purpose of this project was to provide behavioral support for students with ADHD via a self-monitoring intervention. Secondly, this project aimed to provide participating teachers with support and training on how a specific intervention strategy can be used to support students with ADHD in the classroom setting. Lastly, this project aimed to demonstrate that a progress monitoring tool (i.e., DBR-SIS data collection) can be built into the intervention, therefore making school-based data collection easier. The data collected as part of the intervention can be used for school-based decision making (e.g., Tier II progress monitoring, recommendation for Tier III, special education eligibility, etc.).</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p><b>Participants:</b> Participants included five middle school student-teacher combinations. The following eligibility criteria was used when selecting students for participation: (a) have an Individualized Education Plan (IEP) under the category of Other Health Impairment (OHI) or have a 504 plan for ADHD, (b) have a documented diagnosis of ADHD from a qualified medical or mental health service provider, (c) spend more than 50% of their educational day in the general education classroom setting, (d) demonstrate academic and behavioral difficulties in the classroom, and (e) be in grades 6 through 8. The five participating students were all male, mostly White and non-Hispanic, and majority had a diagnosis of ADHD combined type. All participating teachers were middle school (grades 6-8) general education teachers. Majority of teachers were White and non-Hispanic. Four teachers were fairly new to teaching middle school, with three out of five teachers being in their first few years of teaching.</p> <p><b>Timeline:</b> Data was collected for six weeks toward the end of the Fall 2021 semester.</p> <p><b>Intervention:</b> Students were taught how to self-monitor their classroom behaviors (e.g., academic engagement, respect, disruptive). For one class period per day (the class period that was identified as most challenging for the student), students completed a self-monitoring Google Form. Students then met with their classroom teacher for 5-minutes daily at the end of the class period to discuss their behaviors and receive feedback/praise.</p> <p><b>Data Collection:</b> Teachers collected data daily on how often the participating student engaged in the three target behaviors (e.g., academic engagement, respect, disruptive). At the conclusion of the study, participating teachers and students also completed a rating scale that indicated how feasible and acceptable the intervention procedures were.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p><b>Research question 1</b> explored whether student academic engagement and respectful behavior would increase as a result of the intervention. Results indicated that four out of five student participants demonstrated an increase in academic engagement and respectful behavior after intervention implementation, with the most prominent improvements seen in academic engagement.</p> <p><b>Research question 2</b> explored whether student disruptive behavior would decrease as a result of the intervention. Results indicated that three out of five student participants demonstrated a decrease in disruptive behavior after intervention implementation.</p> <p><b>Research question 3</b> explored whether participants found the intervention to be feasible for implementation in the classroom setting. Teachers found the intervention to be feasible, acceptable, and understandable. Additionally, teachers indicated that they were able to implement the intervention with minimal system-level support or resources. Possible explanations for the high level of intervention acceptability by teachers is the relative simplicity of the intervention as well as the involvement of the student in implementation. One of the primary advantages of self-monitoring interventions are how they increase student independence, therefore decreasing reliance on teachers. Results also indicated that students understood the intervention and found it feasible.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The result of this project yielded information supporting the use of an electronic form of DBR-SIS as a self-monitoring intervention designed to improve student academic engagement, respect, and disruptive behavior. Project findings also informed intervention options to improve students' classroom behaviors and strengthen the student-teacher relationship. Additionally, this study provided support for a Tier II/Tier III behavior intervention that is minimally time and resource taxing and can be implemented feasibly in the classroom setting. Lastly, the DBR self-monitoring intervention gave participating educators who were experiencing difficulty managing classroom behavior, an additional practice to support their efforts.</p>

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## Research Applications During the 2021-22 School Year

SCALE-UP Counts: A health information technology approach to increasing COVID-19 testing in elementary and middle schools serving disadvantaged communities.

Investigator: Yelena Wu  
 Proposal ID: 2021-011-Wu  
 Granite administrator or teacher: No  
 IRB: University of Utah  
**Status: Approved 10/13/2021**  
 Anticipated Start Date: 10/01/2021  
 Anticipated Completion Date: 06/01/2022  
 Results: (TBA)

The effects of online math instruction on a linguistically and culturally diverse group of math students in one urban school.

Investigator: Myung Jae Lee  
 Proposal ID: 2021-012-Lee  
 Granite administrator or teacher: No  
 IRB: Westminster College  
**Status: Approved 11/04/2021**  
 Anticipated Start Date: 10/18/2021  
 Anticipated Completion Date: 02/28/2022

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<ul style="list-style-type: none"> <li>• To identify how online education affected diverse students and how administrators and educators were able to help them. It also gives them some access to educational improvements.</li> <li>• To investigate whether the development and access to online education can serve as an opportunity for students to get a better education than they do now.</li> <li>• To explore whether online education can be a learning way to achieve educational equity.</li> </ul>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>1) Setting (In my research, I used a pseudonym)</p> <ul style="list-style-type: none"> <li>• At Mountain High School in a large, diverse urban school district in the Intermountain West</li> <li>• Students who are linguistically and culturally diverse from more than 50 countries studied at the school and with over 30 languages spoken in the students' homes.</li> <li>• This particular high school was minority white and served a majority of students of color from various backgrounds (Latinx, Asian, African American, etc.).</li> </ul> <p>2) Participants</p> <ul style="list-style-type: none"> <li>• 4 teachers: Teacher participants who taught different kinds and levels of math classes.</li> <li>• 12 linguistically and culturally diverse students: In 2 observation classes, I communicated with students to gain rapport.</li> <li>• 5 parents: I was able to interview parents during a parent-teacher conference.</li> </ul> <p>3) Data gathering methods</p> <ul style="list-style-type: none"> <li>• Was collected at Mountain High School with interviews</li> <li>• Different interview protocols and interview methods</li> <li>• Teachers: 30-50 min one-to-one interview in teachers' classrooms</li> <li>• Class observation field notes</li> <li>• Students: 20-30 min group interview (2 groups of 6 students each) in an empty classroom</li> <li>• Parents: 5-10 min one-to-one interview at the parent-teacher conference</li> </ul>

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<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p><b>Through my research, I discovered four themes.</b></p> <ol style="list-style-type: none"> <li><b>1. Technology Use in Classrooms</b> My data revealed that teachers relied on various forms of technology-based learning. Advances in technology have made it possible for teachers to prepare lessons in a learning environment that leads to easy access to learning, such as a variety of instructional materials and math programs. My study results showed that there were limitations to accessing technology. Students identified a lack of access to technology, especially the Internet. Low-income students experienced the impossibility of Internet access at home. The difficulty of accessing the Internet at home due to poverty has hindered learners' learning.</li> <li><b>2. Independence and Pacing</b> In online classes, students have the time flexibility and convenience of learning at home. My study results revealed that students with high levels of independence made a study plan and made good use of their time flexibility. They learned at their own pace, and self-directed learning strengthened their ability to learn efficiently and effectively. In online classes, the freedom of autonomy has caused their lack of concentration, distraction, difficulty in independent learning, and procrastination, resulting in negative learning outcomes. Students and teachers commented that regular communication with teachers can alleviate learning difficulties and students should engage in online learning with their efforts, learning plans, and goals.</li> <li><b>3. The Advantages of In-Person Math Instruction</b> In in-person learning, teachers can manage students in a limited space and provide an environment to focus on learning. In addition, both teachers and students considered interaction important in learning because they could directly and quickly exchange feedback. Students and parents stressed that learning in school is not only a place to learn the importance of academic achievement but also of sociality with others.</li> <li><b>4. Sustainable and Successful Online Learning</b> Teachers stressed that creating continuous and effective online learning requires motivation and independent learning for students. Teachers need interactions using technologies such as learning management systems so that students can learn comfortably and quickly, prepare materials, and communicate continuously. Most teachers recommended hybrid learning that properly uses online and face-to-face learning.</li> </ol> <p>The findings were analyzed based on the experiences of the interview participants. The strengths and weaknesses of online learning that they have experienced and described will be used to develop and improve learning, which is connected to constructivism.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p><b>I give you three suggestions that will help the Granite School District that I have discovered through my research.</b></p> <ol style="list-style-type: none"> <li><b>1. For teachers and students: Doing their best in their respective positions</b> Teachers need to provide quality learning materials for students and have regular communication to help students track their learning. Also, teachers need training for online education, such as becoming familiar with technology and being able to find appropriate materials online. Students must manage their time and schedule for independent learning, and they must also be able to solve learning challenges with teachers while maintaining interaction with them.</li> <li><b>2. For school districts: The implementation of hybrid class</b> Throughout my study, many teachers emphasized hybrid instruction. Hybrid learning is a mixture of in-person learning and online learning. If they use both learning methods properly, I think both teachers and students will give and receive an education without much burden.</li> <li><b>3. For the government: Providing students with Wi-Fi hotspots</b> As my studies show, many students at home are unable to learn due to difficulty accessing the Internet. The government must support providing Wi-Fi hotspots for these students. Even if teachers provide good content of instructional videos, education may become meaningless if students cannot access the content.</li> </ol>

# Granite School District

## Research Applications During the 2021-22 School Year

Exploring the relationship between sensory abnormalities and anxiety in youth with autism and comorbid intellectual disability.

Investigator: Miriam Walkingshaw  
 Proposal ID: 2021-013-Walkingshaw  
 Granite administrator or teacher: No  
 IRB: University of Utah  
**Status: Approved 11/15/2021**  
 Anticipated Start Date: 04/14/2021  
 Anticipated Completion Date: 04/14/2022  
 Results: 1<sup>st</sup> requested on 5/03/2022

Managing air pollution risk through participatory sensing

Investigator: Casey Mullen  
 Proposal ID: 2021-014-Mullen  
 Granite administrator or teacher: No  
 IRB: University of Utah  
**Status: Approved 10/28/2021**  
 Anticipated Start Date: 10/01/2021  
 Anticipated Completion Date: 04/30/2022  
 Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>Our research identified areas of Salt Lake County with gaps in the local non-governmental air quality monitoring network, and recruited families with children with asthma to give air quality sensors to in order to fill in some of those gaps. Through this effort, our research examined how participatory air quality sensing shapes Salt Lake County residents’ exposure experiences.</p> <p>Our research answers three research questions. 1) What are participants’ experiences with accessing air quality sensors and/or non-governmental air quality monitoring network information and how do those experiences compare across participants? 2) How do the participants use the sensors to inform understandings of their air pollution exposures (and specifically their asthmatic child’s exposures) and to make decisions? How does this compare across participants and change through time? 3) What did the participants learn from this process?</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>Our study included 27 participants with children with asthma or other respiratory struggles. Each participant participated in one pre-study interview about one hour in length in November or December. Then from December to March, all participants were asked to answer survey questions once a week for 16 weeks. Participants answered 6 weeks of surveys before they were given an indoor and outdoor air quality sensor, then 10 more weeks of surveys after they received their air quality sensors. Finally, each participant completed the study with a post-study interview lasting about one hour in length during March or April.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<ul style="list-style-type: none"> <li>• Participants reported being familiar with air quality conditions and the importance of checking the air quality due to their experiences with their child’s school checking air quality conditions to make recess decisions. Our findings reflect that schools are an important institution for sharing air quality information with parents and guardians in the community.</li> <li>• During interviews, some participants expressed that their experiences with having a new outdoor sensor at home led them to wish their child’s school also had one so that they could keep track of their child’s air quality exposure throughout the day. Participants whose child attended a school near a sensor reported that they checked it, particularly during worse air quality conditions, and that this contributed</li> </ul>

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### Research Applications During the 2021-22 School Year

	<p>to their sense of feeling informed about their child’s potential air pollution exposure or lack of exposure.</p> <ul style="list-style-type: none"> <li>• Related to asthma action plans at school, we found that participants whose children had an asthma action plan that was shared with the school reported better communication with the school about the child’s asthma than those that did not. For example, if the child had an asthma action plan on file with the school, study parents described that they were more likely to discuss specific steps they wanted the teacher and their child to take on worse air quality days like making sure the child was wearing a mask during outdoor recess or staying indoors during recess.</li> <li>• With regard to the role of teachers in asthma management, there were several prevailing views. <ul style="list-style-type: none"> <li>○ Many participants described teachers as being on the frontline with students in the classroom daily and could better observe students’ respiratory struggles potentially.</li> <li>○ Some participants felt that schools already have so much on their plate (particularly during the pandemic) and they were worried about burdening teachers with asthma care. For example, one belief was that it would be too much work to ask teachers to learn more about the signs and symptoms of asthma to be better at intervening and providing care. While understanding the many demands on teachers and schools, other participants wished that teachers had time to take a more active role in watching for asthma signs and symptoms.</li> <li>○ A couple of participants expressed gratitude for how knowledgeable school staff were about asthma such as teachers who also had asthma and sports coaches who were sensitive to their child’s asthma signs and symptoms. In both instances (teachers and coaches) were described as trusted and able to provide asthma care (preventative or treatment-wise).</li> </ul> </li> <li>• Our research findings aligned with our expectations.</li> </ul>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>Air quality is a significant issue in Salt Lake County. In Salt Lake County, air pollution exposure negatively impacts students’ academic proficiency (Mullen, Grineski, Collins &amp; Mendoza 2020), and contributes to increased absences (Mendoza, Pirozzi, Crosman, et al. 2020). Our study added more air quality sensors to the non-governmental air quality monitoring network in the Granite school district and beyond. Our research efforts to improve the sensor network could help parents and guardians of the community feel more informed about air quality conditions at the neighborhood scale and potentially better protect their children’ s health, particularly children who are sensitive to air quality such as those with asthma. Our interview findings support the need for further efforts to enhance the air quality monitoring network in Salt Lake County. One way to do that would be to install more air quality sensors at community institutions such as public libraries and schools. Our findings reflect that schools serve as an important institution for sharing air quality information with parents and guardians in the community.</p>

A case-study of leadership identity development in school principals.

Investigator: Levi Negley  
Proposal ID: 2021-015-Negley  
Granite administrator or teacher: Yes  
IRB: University of Utah  
**Status: Approved 10/13/2021**  
Anticipated Start Date: 11/01/2021  
Anticipated Completion Date: 02/01/2022  
Results:

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## Research Applications During the 2021-22 School Year

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The intention of my study was to investigate leadership identity development in school principals. Specifically, this study explored the key experiences that contributed to leadership identity development, how principals make sense of journey, and how principals understand leadership identity as it relates to principal practice.</p> <p>The literature is clear that helping leaders establish and grow strong leadership identities is critical to improving principal practice (Robertson, 2017, Cruz-González et al., 2020; Drag-Severson, 2012). In order to understand how school leaders develop their identity, the key experiences that contribute to this development must be understood. The problem rest with the fact that identifying and/or understanding these experiences has yet to be deeply explored (Cruz-González et al., 2020).</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This study was conducted with the help of three participants. Each participant has been in administration for three or more years, participated in the Emerging Leader Academy, and is currently serving as a school principal in the Granite School District. Three separate Interviews were conducted with each participant (nine total interviews) over the course of approximately one month (Nov. 15th-Dec. 15th.). Interview transcripts were transcribed and coded over the months of January, February, and early March.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The findings of this study focused on the relationship between personal identity and leadership identity, how the formal opportunities and appointments of the GSD shaped leadership identity, how relationships influence leadership identity, and how participants navigated tensions of personal agency, identity, and organizational allegiance. An important takeaway discussed in this study included how leadership identity developed in breadth and depth as participants moved up the formal leadership pipeline of the GSD. This was a result of participants discovering self in relation to others as well as the exposure to unique forces shaping identity (overwhelm, settling/gravity, and sight). This study anticipated finding that participants would share more about pre-leadership experiences as a major contributor to leadership identity. This was not the case. For example, this researcher anticipated that both experiences leading up to participants’ careers in education as well as participants’ experience in their roles as teachers would play a more significant role in how they understood themselves as leaders. This was important because it pointed to the fact that participants were contextualizing their leadership lives through the experiences of Emerging Leader Academy, internship, assistantship, and principalship and therefore understanding who they were as leaders through this lens. Given this understanding, the GSD is in a unique position to help leaders more deeply understand who they are and how that understanding can contribute to professional practice.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This study found that the Granite School District’s leadership pipeline is a meaningful and impactful trajectory for leaders. The formal appointments and opportunities experienced across this trajectory (Emerging Leader Academy, internship, assistant principalship, and principalship) significantly shaped both the leadership identity and leadership capacity of each participant. However, it was clear that leadership identity was not intentionally or meaningfully explored and developed during the leadership journey of the participants in the GSD.</p> <p>Given the important role leadership identity plays in shaping the direction of schools (i.e., principal understanding of personal and organizational values, guiding a schools’ mission and vision, and developing and sustaining professional relationships), the GSD has a unique opportunity to support the development of its leaders as they move through the leadership pipeline of the district. By bringing more intention and awareness to developmentally-aware practices that support the growth of leadership identity, aspiring, new, and seasoned leaders have an opportunity to see themselves, their values, and their contexts more clearly. In doing so, leaders are more likely to understand how their sense of leadership self moves their school and the district forward. One possibility is to take a developmentally-aware approach to professional learning. This approach would require a lens that considers just as deeply how the content is being presented as the content itself. By doing so, leaders will have the opportunity to more authentically connect with the content. This is important in that participants of this study universally shared a struggle to connect to authenticity at the district level.</p>

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## Research Applications During the 2021-22 School Year

### Goal-setting in the classroom

Investigator: Sharise Steggell  
 Proposal ID: 2021-016-Steggell  
 Granite administrator or teacher: Yes  
 IRB: Southern Utah University  
**Status: Approved 11/29/2021**  
 Anticipated Start Date: 01/03/2022  
 Anticipated Completion Date: 03/15/2022  
 Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>My 8th grade middle school students struggle with low academic achievement. The research was conducted to investigate if individual SMART goal setting would help students take more ownership of their learning, increase student achievement, and academic self-efficacy.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>The study consisted of 162 eighth grade students in my social studies classes over the course of a 6-week period during third quarter. Students completed pre and post questionnaires to measure their attitudes about goal setting, motivation, and feelings of academic self-efficacy. Students learned how to set Specific, Measurable, Attainable, Relevant, and Time-bound (SMART) goals and created a plan to reach their academic goal. After a three-week period, students filled out a self-reflection form indicating whether they had met their goal, what was going well and where they could improve, and used this data in setting a new academic goal. At the end of the goal setting intervention, students completed the same academic self-efficacy survey, as well as a post attitudinal questionnaire in which they reflected on whether goal setting had increased their achievement and if we should continue using it in class.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I expected both achievement and self-efficacy to increase after the goal setting intervention. I found that academic self-efficacy decreased. This could be due to the short goal setting time frames that were used to ensure students had the opportunity to reevaluate their goals. Many students had not yet met their goal at the three-week marker.</p> <p>There was a substantial increase in academic achievement. The most substantial growth was in my students in the lowest proficiency bracket. During the 2nd quarter, I had over 70 students with final grades between a 0-.9. After the goal setting intervention, the number of students with a final grade of between 0-.9 decreased to 40. Historically low proficient students experienced more success with the goal setting and turned in more assessments. I also saw an increase in revisions. 15 students chose to revise and resubmit 20 individual assessments based on teacher feedback during the 3rd quarter compared to only 1 revision received in the 2nd quarter. I was surprised to find that my historically proficient students did not value the goal setting process, and some even stated that it caused more anxiety and stress.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit the Granite School District.</p>	<p>The ability to use data to implement effective strategies in my teaching benefits all of my students. I teach at a school that is underperforming and diverse in race, culture, and socioeconomic status. Goal setting was effective for the lowest of my students and helped them take ownership of their academic success. This is a life skill and a way to help bridge some of the opportunity gaps that exist for my students.</p>

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### Research Applications During the 2021-22 School Year

#### Beacon Retention Project!

Investigator: Jennifer McKenzie  
Proposal ID: 2021-017-McKenzie  
Granite administrator or teacher: No  
IRB: Southern Utah University  
**Status: Approved 11/12/2021**  
Anticipated Start Date: 11/12/2021  
Anticipated Completion Date: 05/31/2022  
Results: (TBA)

#### School-based and community-based classrooms across the United States: A corpus analysis and the students' perspective.

Investigator: Valerie Garcia  
Proposal ID: 2021-018-Garcia  
Granite administrator or teacher: No  
IRB: Georgetown University  
**Status: Approved 11/22/2021**  
Anticipated Start Date: 12/01/2021  
Anticipated Completion Data: 01/01/2022  
Results: 1<sup>st</sup> request on 04/20/2022  
2<sup>nd</sup> request on 05/03/2022

#### The impact of professional development that focuses technology on science teachers learning and practice

Investigator: Nashmiah Alfuraydi  
Proposal ID: 2021-019-Alfuraydi  
Granite administrator or teacher: No  
IRB: Westminster College  
**Status: Denied 11/22/2021**

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## Research Applications During the 2021-22 School Year

The effectiveness of vocabulary strategies in strengthening social studies writing skills

Investigator: Natalie Clayton

Proposal ID: 2021-020-Clayton

Granite administrator or teacher: Yes

IRB: Western Governors University

**Status: Approved 11/22/2021**

Anticipated Start Date: 11/15/2021

Anticipated Completion Date: 12/03/2021

**Results:**

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of this research was to examine the effects of academic vocabulary strategies on eighth grade English Language Learner students during an instructional unit.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>The participants of this research were twenty, eight grade English Language Learner students in a typical U.S. history class. The unit in which the research conducted was on building a nation after the Revolution and Government and the Constitution. During this unit specific vocabulary strategies such as completing Frayer Models, playing games, reviews, and quizzes were used to better support English Language Learner students' vocabulary. This research project lasted for twelve school days where the teacher saw the students for an hour and ten minutes each day. The data collected consisted of a pre-test and a post-test of the vocabulary words being focused on during the unit.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>When comparing the pre-test data to the post-test the English Language Learners showed an overall improvement of 1.1 points. This may not appear to be significant growth but when limiting factors such as student absences and English-speaking level, the growth is impressive. I was honestly expecting the results to stay the same or to even decrease in the post test. I am very happy and proud of the results the data shows.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This research benefits Granite School District by demonstrating how important vocabulary teaching is to students, especially those whose first language is not English. With a school district as diverse as Granite, it is important to be constantly improving our teaching methods to ensure that all students in Granite have access to meaningful and data proven education and teaching methods.</p>

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## Research Applications During the 2021-22 School Year

The effectiveness of using facilitating learning on 7<sup>th</sup> grade mathematics comprehension and performance.

Investigator: Travis Nelson

Proposal ID: 2021-021-Nelson

Granite administrator or teacher: Yes

IRB: Western Governors University

**Status: Approved 11/22/2021**

Anticipated Start Date: 11/30/2021

Anticipated Completion Date: 12/15/2021

**Results:**

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>I was curious as to whether increasing student participation through using strategies such as popsicle sticks (randomly calling on students), group work, and presentations would have an impact on student learning, proficiency, and retention.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>Pre- and post-test analysis. I implemented strategies such as calling on students using popsicle sticks, group work, rotations, and group-made presentations. The instructional strategies were used over a week (5-days) and included students who provided informed consent (participation size: 12). I collected data from a Canvas Quiz. The unit that was covered included ratios and percents.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I expected increased participation to increase student learning and retention. The results proved this for lower-level math calculations. Students showed much growth with calculating and setting up ratio and percent problems. However, little to no growth was shown for deeper understanding and contextual problems. The students in this study simply needed more direction, guidance, and scaffolding when it came to the deeper contextual problems.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This could benefit GSD when it comes to analyzing which instructional strategies are beneficial to a math classroom going through ratio and percents.</p>

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## Research Applications During the 2021-22 School Year

A multimethod insider action research of a targeted professional development intervention plan for career and technical education teachers.

Investigator: Mandy Chapple  
 Proposal ID: 2021-022-Chapple  
 Granite administrator or teacher: Yes  
 IRB: Texas Tech University  
**Status: Approved 11/30/2021**  
 Anticipated Start Date: 12/01/2021  
 Anticipated Completion Date: 05/01/2022  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>Career and Technical Education teachers are among the highest content area group that enter the workforce without attending an educator preparation program. As such, applicants are funneled through the alternative route to licensure program. The purpose of the study is to understand the perceived perception and competence from CTE teachers regarding instructional strategies employed in the classroom as well as perceived content area knowledge with changing industry needs correlated to curriculum. The benefit for GSD would include understanding the lived experiences from CTE teachers in the district with their professional development needs, creating a targeted professional development plan with five pilot teachers that creates an amalgamation from the building administrator, teacher, CTE director, and content area specialist to focus and home in on the teacher's individual professional development needs.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>Specifically, the researcher will be looking to compare the different perceived importance and perceived competence varying between license levels and CTE pathways. Ultimately the end result will be a pilot program that focuses on individualized professional development plans that work in conjunction with the building administrator, the CTE coordinator, and the CTE director to help the needs of individualized teachers based on feedback from the survey and the focus interviews.</p> <p>The multimethod approach to the study is three-fold:</p> <ol style="list-style-type: none"> <li>1) Survey invitation extended to all CTE Teachers. The survey will include concepts of instructional strategies based on the Borich Assessment Model on perceived competence and perceived importance</li> <li>2) Focus Group (20 Participants in varying CTE Pathways) - Will be done virtually on Fridays for the Junior High and High School teachers either in person or through Microsoft Teams.</li> <li>3) Pilot Group - Five teachers selected (voluntarily) to create individualized professional development plans that are prepared by a committee composed of a building administrator, CTE director, researcher, CTE content area specialist and the teacher.</li> </ol> <p>Timeline will consist of Survey and One-on-One Interviews distributed, collected, and administered in December/January. Pilot program will meet at the end of January/February to identify five participants and their specific targeted professional development plan. Finished with the pilot program in April/May 2022.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The researcher anticipates that a correlation exists between years in licensing level and a drop off in content area knowledge matched to industry standards. The researcher also anticipates that because CTE teachers are coming from industry and/or an alternative pathway to licensure, that there are still gaps in perceived competence in instructional strategies and actual need in professional development that hones into a lapse of a targeted professional development plan to address these gaps.</p> <p>Results: [insert here]</p>

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<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>Lived professional experiences of CTE teachers will be monumental in understanding the specific needs of teachers. While the Granite Way does offer sound, pedagogical components broadly based on district and school need, understanding individualized needs of CTE teachers in both pedagogy but also content area will help strengthen teachers as well as students leaving CTE classrooms.</p>
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Moves school leaders make to support Latina/o students in advanced placement courses

Investigator: Ryan Wells

Proposal ID: 2021-023-Wells

Granite administrator or teacher: Yes

IRB: University of Utah

**Status: Approved 12/13/2021**

Anticipated Start Date: 01/03/2022

Anticipated Completion Date: 01/31/2022

Results: 1<sup>st</sup> request on 04/20/2022

2<sup>nd</sup> request on 05/03/2022 → Results should be available 07/01/2022

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of the study is to examine the leadership moves leaders at two Utah high schools (one in Granite School District and one in Park City School District) make to support Latina/o students in their access and journey through Advanced Placement (AP) courses. A large body of research speaks to the limited access to Advanced Placement programs for minoritized populations, including Latina/o students as well as low-income learners. However, further knowledge is needed to inform school leaders about how to better support their Latina/o students through their experience in access and success in advanced coursework.</p> <p>In Granite School District, I want to collect data and conduct interviews at Kearns High School. I want to specifically look at the impact of the Equal Opportunity School initiative and it's impacts on Latina/o students in AP classes. The simple document collection will entail gathering statistics of AP enrollments, AP course offerings, AP growth and fluctuation, and AP numbers by race. The series of interviews will include a member or members of the school admin team, former member of the admin team, teacher leaders instrumental in the rollout of the Equal Opportunity School initiative, school counselors who have supported Latina/o students, and students 18 years of age and older that have benefitted from the EOS initiative.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>Given that this capstone research project seeks to serve as a program evaluation of Advanced Placement and its accessibility to Latina/o students through deliberate leadership moves, I want to examine and describe two selective cases that have uniquely distinct approaches. The research method for this capstone project will be guided by the case study methodology. According to Creswell (2013), "Case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case-based themes." As I plan to use the case study methodology to guide my research, I approach this project as a practitioner and not as an academic. Therefore, as a practitioner, I will lean on the data collection employed by case study that draws from several sources of information such as, according to Creswell (2013), interviews and documents, but not to the extent of total immersion into each school's access to and support of Advanced Placement for Latina/o students.</p> <p>Leaning on Robert Yin's 2018 Case Study Research and Applications, as I will analyze the data collected from Kearns High School using an array of strategies. During the data collection process, I will apply a combination of procedures, such as examining, categorizing, and tabulating (Yin, 2018). I will start the analysis by, as Yin says, by 'playing' with the data and searching for promising patterns, insights, or concepts.</p> <p>As far as the document analysis from Kearns High School, I want to document who is taking AP courses by race, which AP courses they are taking, and how many of these students are taking AP exams. In addition, I want to analyze these AP numbers over the past several years both before</p>

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	<p>and after the implementation of the school’s push to equitably expand AP, also taking into account the impact of the global Covid-19 pandemic on these statistics.</p> <p>I am in contact with Jeremy Smith, assistant principal at Kearns High School. He is a friend and former colleague of mine that is familiar with my research interests. Using him as my principal reference, I will ask him to provide recommendations for participant interviews from the aforementioned list (administrators, teacher-leaders, counselors, and students 18 years of age and above). Using my contact with Mr. Smith and his counselor recommendation, I will use these individuals to collect the data and to schedule and conduct the interviews.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>My hope is to gather empowering data that highlights an effective approach to supporting Latina/o students in AP classes both with regard to access and success. I have been told that Kearns stands out as a model school with regard to their implementation of the Equal Opportunity Schools and their support for Latina/o students in AP courses. For this reason, I anticipate highlighting their processes, protocols, and successes as they relate to Latina/o student support in AP courses.</p> <p><b>Results:</b> [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>I am confident that the findings from Kearns High School, given its nature and demographic, will be highly transferable to nearly all of Utah’s urban and suburban high schools, particularly Granite School District. Once this capstone research is completed, I will seek to publish my findings and spread the word to districts, schools, and communities across the state of Utah. In addition, I will seek opportunities to provide professional development where possible and present at appropriate conferences. In addition, a valuable deliverable from this study will be an executive summary including the findings gleaned from this research. I will highlight the best practices and policies from these two site schools (Kearns High School and Park City High School) regarding their approach to Latina/o students in AP classes. I have been in close contact with the Granite School District as well as key directors in equity, inclusion, and curriculum and will share my findings with them. I will connect with Granite School District leadership to find ways in which we can scale up district wide. In addition, as a member of the leadership team at Taylorsville High School, I plan to share these findings with our team and explore ways in which these models can be emulated in our school.</p>

Online learning: Perspectives of secondary teachers in northern Utah

Investigator: Matt Smith  
 Proposal ID: 2021-024-Smith  
 Granite administrator or teacher: No  
 IRB: Northern Arizona University  
**Status: Incomplete application**

A prospective study of youth and adolescent injury rates: Can injuries be predicted?

Investigator: Peter Chalmers  
 Proposal ID: 2021-025-Chalmers  
 Granite administrator or teacher: No  
 IRB: University of Utah  
**Status: Approved 12/13/2021**  
 Anticipated Start Date: 01/01/2022  
 Anticipated Completion Date: 12/15/2022  
 Results: (TBA)

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## Research Applications During the 2021-22 School Year

2021-22 School Survey on Crime and Safety (SSOCS:2022)

Investigator: Deanne Swan  
 Proposal ID: 2021-026-Swan  
 Granite administrator or teacher: No  
 IRB: U.S. Census Bureau  
**Status: Approved 12/14/2021**  
 Anticipated Start Date: 02/01/2022  
 Anticipate Completion Date: 06/30/2022  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The School Survey on Crime and Safety (SSOCS) is conducted by the National Center for Education Statistics (NCES), part of the Institute of Education Sciences (IES), within the United States Department of Education, in order to collect extensive data on issues of crime and safety in U.S. public primary, middle, high, and combined-grade schools. The survey asks school principals about topics such as incidents of crime and violence; disciplinary actions; discipline problems; use of security measures; school policies and practices related to school crime and violence; violence prevention programs and activities; the presence and role of school security staff; parent and community involvement; staff training; availability of mental health services; and other school characteristics. NCES is authorized to conduct SSOCS by the Education Sciences Reform Act of 2002 (ESRA 2002; 20 U.S.C. §9543).</p> <p>SSOCS is one of the nation’s few sources of national information on school crime and safety, as reported by principals in U.S. public schools. SSOCS was first conducted during the 1999–2000 school year and was conducted again during the 2003–04, 2005–06, 2007–08, 2009–10, 2015–16, 2017–18, and 2019–20 school years. Many topics in the prior administrations are repeated in the 2021–22 questionnaire to enable comparisons between the nine survey periods. Because data are collected on a recurring basis, it is possible to assess whether our nation’s schools are becoming safer for students and educators. By participating, information from schools in your district allows for comparisons among different types of schools across the nation that are valuable to governing agencies, policy makers, educators and the general public.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>The U.S. Census Bureau collects the SSOCS data on behalf of NCES. SSOCS is a self-administered survey that is offered to respondents via an online and paper questionnaire. An online questionnaire will be offered to all respondents in SSOCS:2022 and a paper questionnaire will be provided as requested, and with the third and fourth mail contacts with schools.</p> <p>Describe your research method(s):        Principals, or the school staff most knowledgeable about school crime and policies for a safe environment, can complete the survey via the online questionnaire or mail it directly to the U.S. Census Bureau. School districts and state educational agencies are not involved in the data collection in any way. Depending on the school’s data collection system, some principals may seek input from other school staff, such as school resource officers or guidance counselors. The survey does not require the participation of either students or faculty. No classroom time is involved in the completion of this survey.</p> <p>SSOCS provides aggregate estimates for public schools across the nation. A stratified sample design is used to select approximately 4,800 U.S. public schools for SSOCS:2022. The sample is designed to provide national estimates of primary, middle, high, and combined-grade schools taking into account the level of instruction, type of locale (urbanicity), and size of the student enrollment.</p> <p>The sampling frame for SSOCS is derived from the Common Core of Data (CCD), the universe of public schools supplied annually by state educational agencies to NCES. Only public schools in the 50 states and the District of Columbia are included in the SSOCS sampling frame. Certain types of schools are excluded, including special education schools, vocational schools, alternative schools (e.g., adult continuing education schools and remedial schools), newly closed schools, home schools, virtual schools, ungraded schools, schools with high grades of kindergarten or lower, and schools run by the Bureau of Indian Education. Regular public schools, charter schools, and schools that have partial or total magnet programs are included in the frame. For sample allocation purposes, strata are defined by instructional level, type of locale (urbanicity), and enrollment size. Both percent minority enrollment and region are used as sorting variables in the sample selection process to induce implicit stratification.</p>

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	<p>The 2021–22 SSOCS data collection will begin in February of 2022. The U.S. Census Bureau, acting as a contractor for NCES, will handle the data collection. Sampled schools will receive a letter notifying them of the survey in February 2022, which will include the log on information to complete the online questionnaire. If the surveys are not returned or items are left incomplete, the school may receive follow-up telephone calls and emails. All follow-up data collection activities will end in June 2022. Completed questionnaires are sent directly back to the U.S. Census Bureau.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The SSOCS questionnaire is divided into 9 broad research objectives, each with a series of measurement items addressing a specific research question.</p> <p><b>Results:</b> [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The U.S. Department of Education recognizes that safe schools are essential for learning: without a safe and secure environment, teachers cannot teach and students cannot learn. Effective data collection that encourages a high level of participation, and clear and timely analysis and presentation of the data, provide educators with a powerful set of tools for achieving the goal of school safety by providing accurate, up-to-date information about school crime and safety. This information is crucial in helping legislators and education leaders make informed decisions to provide a safe school environment. The ability of NCES to provide this important information is contingent upon the voluntary participation of sampled schools, and participation of these schools is dependent upon their districts’ approval. Because your district and its schools represent themselves and many others like them, their participation is vital for producing high quality information. By participating in this survey, you will ensure that information about your districts’ schools is included in those important decisions.</p>

# Granite School District

## Research Applications During the 2021-22 School Year

Nutritional therapy: Current practices, policies, and ideologies present in the special education preschool classroom. A qualitative review of the special education preschool teachers’ perspective.

Investigator: Kelly Maksem  
 Proposal ID: 2021-027-Maksem  
 Granite administrator or teacher: No  
 IRB: Regent University  
**Status: Approved 01/13/2022**  
 Anticipated Start Date: 01/03/2022  
 Anticipated Completion Date: 02/20/2022

**Results:**

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of the research was to find the perspective of special education preschool teachers regarding nutritional therapy use in the classroom and during the Individualized Education Program. The teachers were asked to describe current food practices and policies as it relates to nutritional therapy and the education of students and families at the classroom, school, and district levels.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>4 Large school districts in the state of Utah were contacted to gain permission to interview special education teachers. 2 districts gave permission and only 1 district participated in the interview. 4 teachers total were interviewed via zoom in the months of January and February 2022. Themes were analyzed and reported in accordance with Regent Universities guidelines. The dissertation was successfully presented on March 18, 2022</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The research discovered the following 5 themes:</p> <ul style="list-style-type: none"> <li>• Theme 1—<i>teachers can make a difference in health behaviors</i>—encompasses the sentiment that teachers expressed supporting the whole child through their tendencies, behaviors, and habits.</li> <li>• Theme 2—<i>what a child eats directly impacts their learning and behaviors</i>—recognizes the shared opinion about the relationship between food and a child’s behavior.</li> <li>• Theme 3—<i>role-modeling behavior is important</i>—expresses the feeling to support the needs of the learning child through social, emotional, and role-modeling experiences.</li> <li>• Theme 4—<i>nutrition is not part of the school curriculum</i>—addresses the importance of administrative and district support in the schools.</li> <li>• Theme 5—<i>nutrition is discussed in IEP meetings</i>—acknowledges the variance in understanding and policies regarding IEP, neurodevelopment, and mental health nutrition support.</li> </ul> <p>The above themes directly correlated with researcher anticipation and past research in this area.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The qualitative study provided an opportunity to better understand the current practices, policies, and ideologies present in the SE preschool classroom. The experiences of the SE preschool teachers helped identify areas for improvement and further research. The conclusions reflect the discussions with the participants as interpreted by the researcher. SE preschool teachers were interviewed, but their perspectives included administrators regarding support and policy. The research uncovered that the student’s relationship with support professionals is as crucial as the student-teacher relationship. This is especially recognized in preschool as all four participants have support professionals and other professionals engaged with students for either SE or accommodations. The research was used to start the conversation about nutritional therapy and its place in the classroom. Ideally, the research will be used to support the implementation of nutritional therapy education for teachers that can be used as additional support during the IEP process or the inclusion of a nutritional therapist during IEP meetings.</p>

# Granite School District

## Research Applications During the 2021-22 School Year

Content vs. critical thinking in middle school social studies.

Investigator: Brittany Tamowski  
 Proposal ID: 2021-028-Tamowski  
 Granite administrator or teacher: Yes  
 IRB: Southern Utah University  
**Status: Approved 01/13/2022**  
 Anticipated Start Date: 01/31/2022  
 Anticipated Completion Date: 03/11/2022

**Results:**

<b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?	The purpose of this study is to compare the effectiveness of traditional instructional practices to instruction focused on critical thinking.
<b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.	Throughout the entire study, students received content specific lessons in line with state core requirements. Academic progress was tracked through weekly content assessments and student engagement was measured through daily observations. The six-week study was broken into two three-week instructional periods. During each instructional period students completed a pre and posttest to measure the change in their knowledge of content which was discussed during the instructional periods. During the first three-week instructional period, students participated in activities and reviews that focused on recall of content. During the second three-week instructional period, activities explicitly focused on critical thinking.
<b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.	I assumed that my students would have higher test scores while utilizing critical thinking, thus making the extensive amounts of review unnecessary. What I found was that students did slightly better using critical thinking as a whole. So, while the reviews did not seem completely necessary, the academic growth was not as high as I would have liked. I found that my ESL students made the most significant growth of any group during the critical thinking portion and my SPED students performed the lowest throughout the study, and no matter the method used, showed very little growth.  There were a lot of factors to take into consideration when looking at the results of the data, the most important of those being attendance issues. Daily, there was an average of 25% of the student body absent from class. WIDA testing took place during the entire six-week study, resulting in large amounts of absences as over 50% of the student body is identified as ESL and needed to be assessed.
<b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.	As a district, it would be beneficial if we were focusing on critical thinking skills in the classroom instead of having students memorize facts. At least in my own classroom during this study, it was apparent that the rote memorization techniques did not offer students any extra benefits that they were not already receiving through utilizing critical thinking skills. But what they did get was access to transferable skills that I was able to practice with them that they could use in other classes, on end of year assessments, and in their futures.

Opioid use disorder treatment referral for Utah adolescents.

Investigator: Amanda McLearn-Montz, MD  
 Proposal ID: 2021-029-McLearn-Montz  
 Granite administrator or teacher: No  
 IRB: University of Utah  
**Status: Denied 01/13/2022.**

# Granite School District

## Research Applications During the 2021-22 School Year

### Survey on the state of civics education in Utah

Investigator: Lisa R Halverson, PH.D. Utah Valley University

Proposal ID: 2021-030-HB 327

Granite administrator or teacher: No

IRB: Utah Valley University | Utah State Board of Education (HB 327)

**Status: Approved 01/13/2022**

Anticipated Start Date: 01/13/2022

Anticipated Completion Date: 01/23/2022

#### Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>We surveyed secondary-level social studies teachers throughout Utah, as well as teachers of 4th and 5th grades, the grades responsible for teaching Utah Studies and United States History to investigate civics education. We were particularly interested in answering these questions:</p> <ol style="list-style-type: none"> <li>1. What civic knowledge, skills, and dispositions are being taught?</li> <li>2. What incentives and disincentives exist for the teaching of civics?</li> <li>3. How, if at all, do state and district civics standards affect civics instruction?</li> <li>4. What resources are most needed by civics teachers?</li> </ol>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>We emailed contacts at every district in Utah asking for help distributing this online survey to the pertinent teachers. We are grateful Granite teachers were among the participants.</p> <p>The survey contained multiple choice, ranking, and open-ended responses, and took less than 10 minutes to complete. Participants who wished could enter a drawing for one of five \$100 Amazon gift cards but were otherwise not incentivized (emails were destroyed thereafter and were not connected to survey responses).</p> <p>Responses were gathered in January 2022. The survey received responses from a total 518 teachers, comprising 224 elementary and 294 secondary teachers.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>Our findings indicate that teachers understand the importance of civics and prioritize it in the classroom. In particular, they understand, and are motivated by their responsibility to prepare the next generation with the knowledge and habits of active citizenship. Teachers are influenced by state guidelines and standards. They express a desire to improve their teaching practices concerning civics. Teachers struggle with constraints of time and a lack of emphasis given to the topic of civics, as reflected in administrators' push to focus on the areas that are tested annually (math and ELA) and on which the school is graded or judged. Teachers also struggle with a lack of resources and civics-focused professional development. The desire to teach civics well is evident among Utah's teachers.</p> <p>More details on our findings can be found in the Executive Summary (see below) or Final Report.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>Knowing what resources teachers lack in civics, our Civic Thought and Leadership Initiative (under UVU's Center for Constitutional Studies) will work to create and share resources and professional development opportunities for Utah's teachers, including those of Granite School District. We encourage the district to ensure that teachers know of the conferences we already hold and hope they will elect to attend.</p>
<p><b>Additional Information</b></p>	<p><a href="https://www.uvu.edu/ccs/civic_thought_leadership/">https://www.uvu.edu/ccs/civic_thought_leadership/</a></p> <div style="display: flex; justify-content: space-around;">   </div>

# Granite School District

## Research Applications During the 2021-22 School Year

### Enhancing student teacher self-efficacy and satisfaction with mentoring through targeted development of high leverage practices: A CEEDAR partner study.

Investigator: Cherilyn Blue

Proposal ID: 2021-031-Blue

Granite administrator or teacher: No

IRB: BYU

Status: **Approved 01/19/2022**

Anticipated Start Date: 02/01/2022

Anticipated Completion Date: 06/30/2022

Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The United States is facing an unprecedented and prolonged teacher shortage (Garcia and Weiss, 2019; Ingersoll et al., 2019). The costs of this teacher shortage are staggering in terms of the direct financial costs to schools and the increasing lack of veteran teachers in the field (Ondrasek et al., 2020). Teacher attrition and a lack of qualified new teachers contribute to the teacher shortage. Billingsley and Bettini (2019) linked self-efficacy, supportive school culture, and professional working conditions to increased teacher attrition and indicated more research in these areas is necessary at the federal and state levels. Utah, a high shortage state, faces a number of ongoing challenges in education that exacerbate the teacher shortage exacerbated such as low per-pupil funding, low teacher salaries, high student to teacher ratios, a lack of professional support, and limited special education graduates (Peyton et al., 2020). Current estimates suggest that the cumulative turnover rate of teachers in Utah is 56% and the vast majority of teachers leaving the field do so voluntarily (UEPC, 2016). Other data suggest that a primary reason for exit is due to challenging working conditions, problem behavior in the classroom, and a lack of professional support for early career educators. These challenges are unlikely to change without sustained, focused effort across education preparation programs (EPPs), state education agencies (SEAs), and local education agencies (LEAs). One approach to improving training, effectiveness, and retention is to increase the quality of the student teaching experience so new teachers enter their first year of teaching with greater confidence and skill. Student teachers are typically pre-service teachers completing their final culminating clinical experience. This clinical experience follows the completion of all required coursework and is completed with support from a university supervisor (US) and cooperating teacher (CT), the teacher of record in the classroom in which the student completes their training. Despite this support structure, student teachers still experience a disconnect between the expectations in their pre-service education coursework and the requirements of the cooperating teachers' classroom. These disconnects can result in unfocused mentoring and incomplete training on effective teaching strategies. Providing effective mentorship is critical suggesting that the likelihood of a new teacher leaving the profession is reduced by 50% when new teachers have access to effective mentors (Gray and Taie, 2015). During the past two years of collaborative work supported by the Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR) project, a federally funded national collaborative hosted by the University of Florida, the Utah state leadership team has developed resources to support the improvement of the selection, placement, and collaboration of student teachers and collaborating teachers in the state. Furthermore, the team has developed a series of online modules to focus mentoring on the adoption of high-leverage practices (HLPs) in Utah classrooms. These resources have been developed based on the recommendations from the National Institute for Education Excellent (NIET, 2021) with respect to focusing on instructional improvement (i.e., Strategy 1) and providing support for mentors (i.e., Strategy 2). However, despite the value of these resources, they are not widely used.</p> <p>The purpose of this project is to examine the efficacy of embedding high-leverage practices training in improving placement and targeted pre-service mentoring. To accomplish this goal, we would provide access to the course of high-leverage practices to student teachers from the University of Utah and their cooperating teachers from Granite School District and evaluate their experiences using these resources within the context of mentoring.</p> <p>Research Questions</p> <p>1.) To what extent do cooperating teachers report changing their mentoring practices and experiences based on having access to student teachers' mentoring needs and objectives? (survey - with open response option)</p>
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## Granite School District

### Research Applications During the 2021-22 School Year

	<p>2.) To what extent do student teachers report meeting their professional development goals in relation to the high leverage practices? (pre and post writeup)</p> <p>3.) To what extent is there growth in student teachers' competencies (PAES), dispositions (EDA), PPAT, satisfaction with mentoring, and teacher self-efficacy? (summary of pre/post documents, survey -with open response option)</p> <p>4.) To what extent do student teacher written statements impact the quality of IHE clinical directors' placement decisions? (survey - with open response option).</p> <p>5.) How do university supervisors, cooperating teachers, and student teachers rate the social validity of training and supports for HLPs?</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This study will use a mixed-methods design. This will include calculating descriptive and inferential statistics as well as conducting a thematic analysis of open-response items on the survey.</p> <p><b>Participants:</b> Student teachers are defined as pre-service education majors who have completed their training coursework and are placed in a classroom for a significant, mentored clinical experience. Cooperating teachers are the experienced educators assigned to mentor the student teachers during their summative clinical experiences in classrooms. University supervisors are also assigned to each student teacher and cooperating teacher dyad. The role of the university supervisor is to mentor both members of the dyad and to provide ongoing support to the student-teacher as they complete all requirements for initial licensure. All participants will be adults serving in their traditional professional responsibilities. If granted permission to conduct this study, we would recruit student teachers from the University of Utah, who are completing their student teaching within Granite School District and the cooperating teachers who support them. Regardless of participation in this project student teachers, cooperating teachers, and their university supervisors will complete all activities associated with their summative clinical experiences.</p> <p><b>Procedures:</b> The university supervisors will invite participating student teachers to complete a brief summary of their goals for their student teaching experience. This will include specific goals on the observation and implementation of high leverage practices. Student teachers and cooperating teachers will complete the high leverage practices canvas course, an online teacher development experience that will take approximately 4 hours. Prior to the start of student teaching, the student teachers and cooperating teachers will complete a survey with items addressing social validity, teacher efficacy, and high leverage practices training.</p> <p>After the completion of student teaching, all participating groups will complete a final survey addressing all the aforementioned areas and their qualitative experiences as a participant in this study. Student performance data will also be collected from a matched comparison group. These data are routinely collected at the end of the student teaching experience and will be de-identified for our analysis.</p> <p><b>Measures:</b> Teacher Sense of Efficacy Scale (TSES): Teachers' sense of efficacy is the belief in their capability to make a difference in student learning, to be able to get through even to students who are difficult or unmotivated. The Teacher Sense of Efficacy Scale asks teachers to assess their capability concerning instructional strategies, student engagement, and classroom management.</p> <p>Intervention Rating Profile 15 (IRP-15): The IRP-15 is a research-validated tool for measuring social validity. It focuses on questions that address the usability, feasibility, and effectiveness of educational interventions. In this case, the questions will address the social validity of the mentoring matching process and the high leverage practices course.</p> <p>High-leverage practices training survey: Questions on the pre-post survey will address training that the participants have received and their confidence using high leveraged practices in the classroom. In addition, the post-practices will address the degree to which the high-level practices training enhanced the ability of cooperating teachers to provide effective mentoring in high-level practices.</p> <p>Student-teacher performance data: All participating programs collect data on the performance of student teachers using the PPAT, a dispositions survey, and the PAES. These tools are collected by the pre-service programs as a routine part of the evaluation of student teachers and will be used in this study to compare outcomes within and across students in the program. These data are required by the state of Utah to be</p>

## Granite School District

### Research Applications During the 2021-22 School Year

	collected by the university pre-service programs. We will request de-identified data from this non-public repository.
<b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.	We anticipate that we will learn more about how to promote the use of asynchronous online trainings and how these experiences coupled with focused mentoring impact teacher efficacy and desire to implement empirically supported treatments.  <b>Results: [insert here]</b>
<b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.	We anticipate that coordinating teachers will learn new ideas about high leverage practices from the course they complete which may improve their mentoring activities.

#### Curriculum evaluation of an abstinence-only education (AOE)

Investigator: Jeremy Muir

Proposal ID: 2021-032-Muir

Granite administrator or teacher: Yes

IRB: Western Governors University

**Status: Approved 01/18/2022**

Anticipated Start Date: 01/25/2022

Anticipated Completion Date: 03/21/2022

Results:

<b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?	This capstone project aims to see if the Abstinence-Only Education (AOE) curriculum aligns with the National Sex Education Standards (NSES). Currently, in the state of Utah and my school district, we teach an AOE-based curriculum. As a middle school health teacher, this curriculum evaluation would reveal what students in Utah's middle schools are missing out on in the human development curriculum. Completing this evaluation will also allow me to make suggestions for supplemental material for the AOE curriculum that falls short of the NSES. I am also currently a member of the district's sex education committee, which approves and reviews new and current materials that teachers want to use during the human development unit. When completed, I can bring the project's findings to the committee's attention and maybe start the process of adopting a new curriculum for the district that aligns with the NSES. The data collection method that I will use for this project will be quantitative.
<b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.	<p>The data collection method that I will use for this project will be quantitative. Using the curriculum evaluation rubric will allow me to score the AOE curriculum for any potential deficiencies that do not align with the NSES. Under the quantitative collection method, I will use the technique of descriptive statistics to assist after evaluating the AOE curriculum. The mode is the function that will provide the potential amount of deficiencies in each section of the AOE curriculum.</p> <p>The curriculum evaluation rubric will be broken into eight sections vertically and eight categories horizontally. The eight vertical sections are the curriculum's content like anatomy and physiology, puberty, gender, sexual identity, and more. The eight horizontal categories are the themes of the curriculum like core concepts, decision-making, goal setting, advocacy, and more. This curriculum evaluation rubric will allow me to place the AOE curriculum into the correct content sections and see if they meet the themes.</p>

## Granite School District

### Research Applications During the 2021-22 School Year

<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I hypothesize that the AOE will fall short of aligning with the NSES. If the hypothesis is correct, I will then suggest supplemental material to align it to the NSES.</p> <p>Using the mode function, I was able to find that two of the sections had the same quantity of deficiencies when aligning the Utah AOE curriculum to the NSES. The two sections with the same quantity of deficiencies were sexual orientation and identity and sexual health. For the sexual orientation and identity section, the following are the standards that did not have aligning Utah AOE standards. To see what standards are deficient and what they say, please refer to Appendix D.</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>Since I am currently on the Granite School Districts Sex Education Committee it could be possible to share my findings with the committee. This could open a conversation door for the district to adopt a Comprehensive Sex Education (CSE).</p>

#### From Readers to writers... the spelling transition

Investigator: Jill Dee

Proposal ID: 2021-033-Dee

Granite administrator or teacher: Yes

IRB: Southern Utah University

**Status: Approved 02/01/2022**

Anticipated Start Date: 02/07/2022

Anticipated Completion Date: 03/15/2022

#### Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The concern that this research chose to address relates to approximately 30% of the U.S. population who are at-risk for poor spelling. This can be due to certain life circumstances or physical conditions/ symptoms that hinder their abilities to hear and order the sounds within words (to phonologically process words) in order to spell them correctly.</p> <p>This research explored whether connecting a picture (a symbol) and a logical concept (a mental link) could help students to remember the correct vowel pattern for each word that they were spelling. Adding these additional supports to spelling is termed, a Visual and Conceptual Phonics Support System (VCPSS).</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This research involved 40 students across multiple 2<sup>nd</sup> grade classes. 26 of the participants were classified as "struggling spellers" and 14 were classified as "typical spellers." Eleven sub-groups of struggling spellers were also identified based on symptoms or life circumstances, such as Multi-lingual Learners, students with attending difficulties, etc. Students participated in Pre-project and Post-project Student Interviews, 4-Day Spelling Lessons based on the VCPSS method, Mid-week Dictation Practices and Weekly Pre and Post Spelling Assessments.</p> <p>The student interviews gave insight (through keyword frequencies) into whether the phonological processing of the students improved and whether they had linked vowel patterns to the images and concepts that they have learned through the VCPSS method.</p> <p>The Mid-week Dictation Practices included sentences containing the vowel patterns being studied each week plus the vowel patterns that had previously been learned using the VCPSS method. The dictation papers were analyzed (with descriptive statistics) to determine the long-term retention of previously studied vowel patterns that students retained.</p> <p>The students' Spelling Pre-tests and Posttests were analyzed (using a Paired T-test approach) to determine whether there had been spelling accuracy gains or if there were losses or stagnations in accuracy levels.</p>

## Granite School District

### Research Applications During the 2021-22 School Year

<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>Gains in spelling accuracies were expected. and were also realized:</p> <ol style="list-style-type: none"> <li>1. Phonological processing improved by 55%.</li> <li>2. Spelling accuracy gains from Pre-tests to Posttests improved an average of 37% (with the exception of one week of -3% negative growth when a COVID Omicron surge drastically affected student attendance.)</li> <li>3. Student interviews showed that students used the VCPSS pictures and concepts to remember correct spelling patterns (and to process new spelling words containing those patterns) 27% of the time.</li> <li>4. Long-term retention of accurate spellings by students who typically struggled to spell was 60%.</li> </ol>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The benefit to Granite School District students is that this VCPSS approach provides a way for students who typically struggle to spell to have two additional ways to remember correct spelling patterns. This proved helpful for students who struggled with autism spectrum disorders, attending deficits, dyslexia, anxiety disorders and life circumstances such as being a multi-lingual learner, being hearing impaired, or being a struggling speller for an unknown reason (students who are often described as being “on the bubble.”)</p> <p>Being able to spell correctly will improve student educational opportunities and outcomes. Writing should become more fluid and the Language Arts and Writing scores of students should improve. Multi-lingual language acquisition should also occur at faster rates.</p>

#### Secondary school counselors describe changes in delivering services due to COVID-19

Investigator: Jenett Houghton  
 Proposal ID: 2021-034-Houghton  
 Granite administrator or teacher: No  
 IRB: Grand Canyon University  
**Status: Approved 02/09/2022**  
 Anticipated Start Date: 04/01/2022  
 Anticipated Completion Date: 05/31/2022  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>Research is needed to investigate the experiences of school counselors as they change how they provide services to students in response to external. barriers. School counselors will provide their descriptions of their experiences with change in delivering services due to COVID-19 through a questionnaire and/or interview. No treatments or interventions will be applied and no students will be included in the research</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This is a qualitative descriptive design with data collected through responses to a questionnaire and/or an interview. The analysis will include coding that identifies themes in the verbiage/experiences shared with the researcher.</p> <p>My university requires Site Approval as part of the IRB application. Your site approval can be a conditional approval, pending IRB approval. I will attach a copy of the questionnaire and interview questions that are currently being reviewed by my expert panel. Once approval is received from IRB, I will forward their approval letter. For data collection, I will forward the questionnaire to the contact person at your site, and they will forward it to high school counselors in the district. This questionnaire will be anonymous, and participants can respond at their convenience. Within the questionnaire, participants will be able to volunteer for a confidential interview that will also be scheduled at their convenience. The questionnaire is expected to take 15-20 minutes depending on responses and the interview will take approximately 60 minutes. I will begin scheduling interviews as participants volunteer.</p>

## Granite School District

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<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>My goal is to gather the experiences of and obtain further understanding of what it was/is like to respond to COVID-19. This would include understanding how their role as school counselors has changed, what the change process was like, and how their use of technology has changed.</p> <p>Results: [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The research will include the experiences of school counselors in the state of Utah. I anticipate the results will help the district further understand their school counselors and their ingenuity for utilizing existing resources in a new way, identify resources that may be needed, and further understand their student needs based on how school counselors responded to the given phenomenon.</p>

#### Teachers' values for the reduction of teacher attrition in Utah public schools

Investigator: Forrest Jensen

Proposal ID: 2021-035-Jensen

Granite administrator or teacher: No

IRB: BYU

Status: **Approved 02/25/2022**

Anticipated Start Date: 03/07/2022

Anticipated Completion Date: 03/28/2022

Results:

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of this study is to explore what teachers value most in a teaching position in order to better understand how these values impact teacher attrition. Out of my four factors, two factors were chosen because they are well-established in the literature as important in influencing teacher attrition: salary and administrative support. The other two factors were chosen because little is known about them in the literature: medical benefits and perceived teaching difficulty.</p> <p>This study is innovative because it deeply explores the ways that teachers relate to four major factors in evaluating the quality of their job. Using scenarios will help to situate the factors in a hierarchy that is contextualized and gives more information than we see in previous studies. Using a two-step cluster is also a unique aspect of this study in relation to research that has been done with teacher values thus far. By clustering data into profiles of teachers we hope to gain a more holistic view of what teachers' value based on the complex social positionalities that frame the ways teachers may evaluate teaching positions. By looking deeply at who teachers are and how they value these elements of a teaching job, we can help reduce attrition and improve teacher retention.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This is a descriptive quantitative study. There will be a single survey sent to teachers via Qualtrics to enable the two-step cluster analysis to describe what different positionalities of teachers' value and how those values are affected in a rank order question versus questions that bring the values into a hypothetical context. This survey will include four types of questions: demographic, simple rank order, scenarios, and current position.</p> <p>The demographic question will ask participants to share their: wage earner status (e.g., are they the primary wage earner, over 60% of household income), years taught, gender, race, age, highest degree obtained, teaching subject, household size, income, teaching level, traditional or nontraditional route to licensures, and the number of dependents.</p> <p>The rank question will ask them to rank order the four variables of interest based on their relative value: salary, medical benefits, administrative support, and perceived teaching difficulty.</p> <p>The scenario questions will present specific scenarios with details comparing two potential job offers and ask the participant to pick one or the other. For example, one scenario will ask them</p>

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	<p>to select between a job with 10% higher pay than they make and normal benefits and another job with the same pay and better benefits.</p> <p>Finally, the current position questions will ask two questions about their current position: "From a scale of 1-6 how likely are you to continue teaching until you retire?" and "Rank your current teaching job within the following factors on a scale from 1-6."</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>Learning how teachers' values are affected by their positionalities. that there is a wide variety of values that teachers have, but that there are certain rankings that certain groups have in common.</p> <p><b>Results:</b> <i>Unfortunately, we do not have any findings to report. This is because we only received responses from 49 Granite School District teachers. We were unable to use such a small sample in our analysis and will be focusing on data from districts with a higher response rate.</i></p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>Potential benefits for districts include increased information of what teachers' value so that they can be given the things they value. Specifically, we can see how they rank these values in context and how teachers value medical benefits specifically. It also is the first step to enable further research in how teachers value different factors not included in this specific study.</p>

#### Evaluation of the Mark Miller Subaru math one-to-one tutoring program

Investigator: University of Utah, Utah Education Policy Center (UEPC)

Proposal ID: 2021-036-Miller

Granite administrator or teacher: No

IRB: Approved "Fee for Service Agreement"

**Status: Approved 02/15/2022**

Anticipated Start Date: 11/18/2021

Anticipated Completion Date: 08/30/2022

Results: (TBA)

#### Longitudinal Analysis of IEPs for Students with Extensive Support Needs

Investigator: Michael Farrell

Proposal ID: 2021-037-Farrell

Granite administrator or teacher: No

IRB: University of Utah

**Status: Denied 03/28/2022**

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### Enhancing student engagement in the Utah Chinese Bridge Program

Investigator: Shin Chi Fame Kao

Proposal ID: 2021-038-Kao

Granite administrator or teacher: No

IRB: University of Utah

**Status: Approved 03/31/2022**

Anticipated Start Date: 04/18/2022

Anticipated Completion Date: 05/20/2022

Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The Utah Chinese Bridge Program (UCBP) offers three upper-division university Chinese language courses to high school students who have passed the AP Chinese exam as a concurrent enrollment program. This program has been established for more than 3 years since 2018. Since it is a relatively new and innovative language program in Utah as well as in this country, little research about this program has been done. Thus, the main purpose of doing this study is to investigate the effectiveness of the instructional strategies implemented in this program regarding student engagement after three years of its establishment. It aims to investigate the relationship between student engagement and the instructional strategies commonly used in the UCBP as well as the relationship between each instructional strategy and student engagement mediated by the students' years of learning Chinese and their home language. The result will help the Chinese Bridge teachers to make further applications and modifications when designing the course curriculum and lesson plans for the purpose of enhancing student engagement and developing differentiated instructional strategies to meet student diverse needs.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>The principal investigator (PI) is planning to recruit approximately 80 students in 4 Chinese Bridge classes in Cottonwood High School and Taylorsville High School in Granite School District to take a self-reported questionnaire. This survey aims to collect data on their perspectives on the instructional strategies used in the Utah Chinese Bridge Program (UCBP) and their engagement level. This questionnaire consists of 35 questions asking about student's home language background; some general demographic information such as their age, grade level, gender, and race; and their perception regarding the frequency of four common instructional strategies (guided reading lesson, constructive feedback, group discussion, and project-based language learning) used in their Chinese Bridge class, if these strategies help them learn, and their learning engagement in four domains (social, emotional, behavioral, and cognitive engagement). It is planned to ask students to complete this questionnaire in their Chinese Bridge class, which will take 20-30 minutes of instructional time. After collecting survey data, The PI will then use confirmatory factor analysis and regression analysis to analyze the data and answer three research questions.</p> <p>It is planned to recruit around 80 Chinese Bridge students from the above two high schools to participate in taking a questionnaire. The principal investigator will give blank paper assent forms (for students 14-17 years old), consent forms (for students 18 years old or above), and parent permission forms to the Chinese Bridge high school teacher in each participating high school. They will help the PI to collect signed consent back. It is anticipated to take 2 weeks between informing participants and obtaining consent in each school. After obtaining signed consent, the PI will go to each class to explain the purpose of this study to all participants and conduct this survey in class. Students will spend 20-30 minutes taking an online questionnaire via Google Form. Each school district will have its individual Google Form link to the questionnaire so the data will be collected by the district and not by individual school or by classroom. Students' names and their schools will not be collected in this questionnaire. The collection of information about participants is limited to the amount necessary to achieve the aims of the research so that no unneeded information is being collected. The questionnaire result will not be shared with students' instructors directly, so their answers will not affect their grades. Data collected from Google Form will be de-identified and each student will be assigned a number so that no names or other identifying information will be available. Then, research data will be transferred to a statistic software, Stata, as a database and removed from Google Form. Periodic review of the transfer/transcription of data from the original source to the research record will be conducted weekly until the survey is done. After data is collected, it is planned to do confirmatory factor analysis (CFA) to generate four dimensions of student engagement including emotional, social, behavioral, and cognitive engagement. Then, it is planned to use regression analysis to answer the first research questions. Each dimension of student engagement, the factor score generated</p>

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	<p>from the CFA, will be the dependent variable for each regression analysis. Four instructional strategies are the variables of interest, which are measured by both student perceived frequency and effectiveness. Gender, years of learning Chinese, and student home language background will be control variables. The regression analysis will help answer the questions of whether the frequency and effectiveness of each instructional strategy are associated with each dimension of student engagement and which instructional strategies matter the most to which domain of student engagement. Finally, to answer the second and the third research question, it is planned to use the same set of regression analyses for research question one with the addition of interaction terms between each instructional strategy and years of learning Chinese as well as between each interaction strategy and home language background.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>Based on the literature review, it is hypothesized that all four instructional strategies commonly used in the UCBP will effectively impact student engagement in four domains but probably to different degrees. It is possible that two teacher-guided instructional strategies (guided reading lessons and providing constructive feedback) might impact students' engagement to a lesser degree than the two learning-centered instructional strategies (group discussion and PBLL), especially in the domain of cognitive engagement. As for the second research question, it is predicted that the years of learning Chinese will affect student engagement based on the literature review regarding students' learning resistance at the secondary level in the dual language immersion program. It is hoped that this study will provide evidence about how the years of learning Chinese mediates the relationship between instructional strategy and student engagement. As for the third research question about whether students' home language background will affect student engagement in the UCBP, it is anticipated that the study results will reveal whether the student's home language mediates the relationship between instructional strategy and student engagement and to what extent.</p> <p>Results: [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>It is planned to report the data analysis to the committee of this Capstone project, the Utah Bridge Program leaders, and the Chinese Bridge instructors across Utah for further discussion about which classroom instructions are effective to meet students' learning needs and enhance their language proficiency. The result will help the Chinese Bridge teachers in the district to make further applications and modifications when designing the course curriculum and lesson plans for the purpose of enhancing student engagement and developing differentiated instructional strategies to meet student diverse needs. It may also provide leaders and teachers of the Chinese Dual Language Immersion Program at elementary and secondary levels in the district with a reference when discussing how to improve the articulation of curriculum and instructional strategies in the program. This entire research will be published as the PI's doctoral dissertation and probably be summarized as a paper published in a journal related to dual language immersion education or second language teaching and research. This study could help teachers and researchers learn best practices in teaching Chinese.</p>

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## Research Applications During the 2021-22 School Year

### Phonemic awareness interventions and English language learners

Investigator: Denaé Boudreaux

Proposal ID: 2021-039-Boudreaux

Granite administrator or teacher: Yes

IRB: Southern Utah University

**Status: Approved 04/13/2022**

Anticipated Start Date: 08/25/2022

Anticipated Completion Date: 10/31/2022

Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>My project focuses on English Language Learners and their ability to perform phonemic awareness tasks. I currently work as a reading interventionist and noticed how difficult it is for the students who are learning English as their second language to pick up phonemic awareness skills, specifically in first sound fluency. I have used the Heggerty phonemic awareness program as both a teacher and as an interventionist and have seen great growth in students' achievement when a physical movement has been added into the learning routine. However, there is no movement aligned with first sound fluency. I want to create a specific movement in relation to first sound fluency to use during my interventions with the ELL students and measure if it helps them become more proficient in the skills. I would work with these students 3-4 times a week in a small group setting, which is already what I do in my current position. The only thing that would change from what I am regularly doing would be the collection of data for my thesis.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>I will be working with the students 3-4 times a week in a small group setting. I will use their BOY Acadience first sound fluency scores as a starting point. I will then teach the students the physical movement (pinching the first sound, pinching their two fingers to break just the start of the word off) We will use that physical movement during all of our phonemic awareness intervention activities. I will progress monitor the students at the end of each week for the 8 weeks of the study. I will also log student engagement each day on a scale from 1 to 5. 1 being not at all engaged and 5 being fully engaged. I will also be keeping a log of my own personal observations to compare to past experiences I have had in teaching first sound fluency. At the end I will be comparing their FSF scores from their BOY benchmark to their progress monitoring scores as well as looking at how engaged they were in the activities where the physical movement routine was present.</p> <p>I will identify the ELL students based on kindergarten enrollment. I will send home a parent consent form for use of their child's data. I plan to have to done in Spanish as well as English. There are resources at my school to help communicate with parents who do not speak English. The data points should be pretty easy to collect, seeing as I already help to collect progress monitoring data as part of my job as a reading interventionist.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I hope to find that by adding this physical movement routine I can help ELL students gain the most basic phonemic awareness skill. My research question is to what extent adding a physical movement routine increases an ELL student's ability to identify the first sound in a word. This research goes hand in hand with what I already do for my job. The only thing that is a little different will be getting permission to use the data that I collect in my thesis. Everything else are things that I already do every day as part of my job.</p> <p><b>Results:</b> [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>As I have been researching this specific topic there is not a lot of research done on ELL students and phonemic awareness interventions. It is something that I think needs to be studied. Researchers have found that phonemic awareness is one of the best indicators of a child's future ability to read. ELL students are an ever-increasing population of students. If we can find ways to help them be successful when they are young, we don't have to spend as much time later on trying to catch them up to their peers. Every child deserves to learn to read. This is a simple way to help that happen.</p>

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## Research Applications During the 2021-22 School Year

A critical policy analysis of dual language education policies on the equity and opportunity of participation and access for multilingual learners.

Investigator: Justin Andersen  
 Granite administrator or teacher: No  
 IRB: Utah State University  
 Proposal ID: 2021-040-Andersen  
**Status: Denied 04/22/2022**

Fourth grade division instructional unit

Investigator: Mikayla McCauley  
 Granite administrator or teacher: Yes  
 IRB: Western Governors University  
 Proposal ID: 2021-041-McCauley  
**Status: Approved 05/02/2022**  
 Anticipated Start Date: 05/09/2022  
 Anticipated Completion Date: 05/11/2022  
 Results: TBD

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>This is a quantitative research project studying the impact of a long division instructional unit on student proficiency. The data collection instruments for this project are a pre-test and post-test that will be given at the start and end of the instructional unit. The teacher will be teaching four one-hour lessons focused on long division over the course of four days. The teacher will be using different instructional strategies, materials, and student group arrangements (i.e., small group, whole group, partner work) for each lesson.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This instructional unit will be taught in four one-hour lessons over the course of four school days. On the first day, students will take the pre-test created by the teacher. Following the pre-test, they will participate in a whole group review of the long division steps and solving practice problems using white boards and teacher prompts. Day two will begin with a brief review of long division on white boards and require students to work on a worksheet in a small group. The teacher will monitor each group to check for understanding and answer questions. The third day will be a reteaching worksheet that students will complete in pairs. The teacher will continue to monitor and check in with all students as they complete their work. On the fourth day, students will work on task cards that are placed around the room. They will go from problem to problem, solving them independently with teacher assistance as needed. At the end of the week, students will take a post-test.</p> <p>The participants of my capstone research project are fourth-grade students in my current class. There are twenty-three nine-year-old students who will be taking part in this project. These participants are the focus of my research question. As I have worked with these students all year, I have seen the concepts that they excel at and the ones they struggle with. The purpose of this project is to measure how an instructional unit effects the proficiency of long division with this group of students. This group of students has struggled to understand long division and solve problems correctly. They are coming up on the end of the year and it is imperative for them to be proficient in long division for their success in school moving forward. This research project will take approximately one week with four days of one hour instruction lessons.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I am anticipating to show growth in the proficiency of my students as it relates to the division standard of fourth grade mathematics.</p> <p><b>Results: [insert here]</b></p>

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<b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.	The results of this instructional unit will help me to improve my instructional methods going forward and also provide data to show the benefits of using an instructional unit for long division. This information can be shared with my team to help us improve our mathematics instruction going forward.
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#### Analysis of substantive content of individual education programs for students with extensive support needs

Investigator: Michael Farrell  
 Granite administrator or teacher: No  
 IRB: University of Utah  
 Proposal ID: 2021-042-Farrell  
**Status: Under review 04/26/2022**  
 Anticipated Start Date: 05/02/2022  
 Anticipated Completion Date: 08/15/2022  
 Results: (TBA)

#### Effects of repetitive practice on sight word recognition

Investigator: Jodi Larson  
 Granite administrator or teacher: Yes  
 IRB: Western Governor’s University  
 Proposal ID: 2021-043-Larson  
**Status: Approved 04/28/2022**  
 Anticipated Start Date: 05/09/2022  
 Anticipated Completion Date: 05/17/2022  
 Results: (TBD)

<b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?	Kindergarten students at the researcher’s school struggle with sight word recognition. This negatively impacts their ability to progress with early literacy skills. The possible cause of this problem is that instructional supports are not meeting student needs. This research study will investigate the effects of an instructional intervention that provides daily repetitive practice with sight words.
<b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.	<p>The product for this research will be an instructional intervention providing daily repetitive practice of sight words. A pre assessment will be given to establish a baseline. Each day of the intervention, students will be shown a digital presentation of thirty sight words identified by the researcher’s district as on kindergarten benchmark level. The words will be presented in random order which will change with each viewing. Students will be asked to read the words out loud as quickly as they can. Words students read incorrectly will be reviewed at the end of the presentation. This repetitive practice will be provided in two sessions per day. At the end of the intervention, students will be given a post assessment. Comparison of the two scores will provide evidence of the impact the instructional intervention had on sight word recognition.</p> <p>Perspective participants will include students from the researcher’s kindergarten classroom who are below grade level with sight word recognition. Parents/guardians will be sent an informed consent form asking for permission to have their child participate in the research study. The data collection method used will be quantitative action research conducted in the researcher’s kindergarten classroom. The data collection instrument used will be a pre and post assessment. The thirty words identified by the researcher’s district as grade-level words will be listed in random order. The word list will be in a table with each word in a separate section. The</p>

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### Research Applications During the 2021-22 School Year

	<p>data collected from this instrument will be a number out of a possible thirty to determine a percentage of words read correctly. The same instrument will be used as a pre and post assessment to provide comparison data.</p> <ul style="list-style-type: none"> <li>• Prior to day one, informed consent forms will be obtained for each participant.</li> <li>• Day One: The data collection pre assessment of thirty sight words will be administered to each participant and will take twenty-five minutes.</li> <li>• Days Two-Six: The instructional intervention will be conducted with each participant. Students will be shown a digital presentation of the target words two separate times during the day, once during the first half of class time and again during the second half of class time. Students will be asked to read the sight words as quickly as possible, while the teacher marks the words as correct or incorrect. Words not attempted after three seconds will be marked wrong and skipped. At the end of the presentation, words the student missed will be reviewed. The intervention will last fifty minutes per day.</li> <li>• Day Seven: The data collection post assessment of thirty sight words will be administered to each participant and will take twenty-five minutes.</li> </ul>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I expect the research study to show that daily repetitive practice has a positive impact on sight word recognition.</p> <p style="color: red;">Results: [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The product is intended to positively impact the researcher’s class by moving students who are below grade level with sight word recognition to on grade level. The study may help the researcher and other educators acquire additional teaching techniques to facilitate student learning.</p>

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## Research Applications During the 2021-22 School Year

Collective teacher efficacy and effective Title I eligible schools: A mixed methods approach.

Investigator: Don Mendenhall  
 Granite administrator or teacher: No  
 IRB: Utah State University  
 Proposal ID: 2021-044-Mendenhall  
**Status: Approved 05/17/2022**  
 Anticipated Start Date: 08/25/2022  
 Anticipated Completion Date: 02/01/2023  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>This research project will try to identify effective schools that serve large populations of at-risk students (i.e., 40% of school population that is eligible for free, or reduced lunch). We are defining effective schools as those who have high levels of academic success, high levels of collective teacher efficacy and schools that serve large populations of at-risk students. The study will then attempt to identify the processes and strategies that help make these schools successful.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This is a mixed methods research study with two phases. The first phase will be a quantitative phase that uses descriptive statistics to describe the highest performing Title I eligible schools (i.e., schools with a student population of 40% or more free, or reduced lunch eligible students) and those schools' levels of collective teacher efficacy (CTE). The second phase will be a qualitative case study where three of the schools from the first phase of the study will be identified as having one of the highest academic levels, one of the highest levels of CTE and one of the highest populations of at-risk student populations. These three schools will then be included in the qualitative interviews and focus group discussions with teachers and school administrators to identify the highly effective practices of these schools.</p> <p>We will contact district offices to get permission to approach district schools to participate in this study. If districts and schools give permission, we will send teachers an email with the information regarding the study along with the informed consent documentation. Schools and school staff members may request to be removed from this study at any time. School staff members who agree to participate will have access to the CTE survey via a Qualtrics survey link.</p> <p>In the first quantitative phase of the study, CTE will be measured using a 21 question CTE scale used to measure CTE. In the second case study phase, virtual interviews and virtual focus group discussions will be conducted in order to gather qualitative data.</p> <p>The proposed timeline for the study is as follows:      -Distribution and completion of the CTE scale in August and September.      -Qualitative participant identification completed in October.      -Qualitative interviews and focus group discussions completed by December.      -Qualitative analysis and final report complete by February.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>We expect to identify effective Title I eligible schools and to find the effective strategies and practices found in these schools.</p> <p><b>Results: [insert here]</b></p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>The results of this study will be shared with Granite School District. These results may provide examples and processes for schools to follow in order to increase teachers' and schools' levels of CTE which in turn may help increase student learning in all schools.</p>

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## Research Applications During the 2021-22 School Year

### Three-digit subtraction

Investigator: Regi Fowler  
 Granite administrator or teacher: Yes  
 IRB: Western Governors University  
 Proposal ID: 2021-045-Fowler  
**Status: Approved 05/10/2022**  
 Anticipated Start Date: 05/16/2022  
 Anticipated Completion Date: 05/27/2022  
 Results: (TBA)

<b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?	I am doing an intervention with three-digit subtraction as I have taught this skill for many years it is hard to for students to understand this skill. This intervention will have my students using virtual base ten blocks, drawings and then the standard algorithm. I will be doing a small group of 5-6 students during our small group math time. They will be given a pretest that will group them according to their understanding. During instruction there will be checks for understanding every day and at the end of the study there will be a post test. The last day of the study the learners will be interviewed to gather their thoughts.
<b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.	My second graders already have a good understanding of three-digit subtraction, and I am hoping that this intervention will deepen their understanding. The pre-test will be the same as the post and will be the same so I can compare the scores. The daily checks for understanding will be to make sure that the students understood what was taught that day.  The participants will be the 2nd graders in my class with the correct approval. I want to send home the approval note next week and I hope to get started on Thursday May 12. Day 1 one of the study will be the pretest and then every school day after that students will be in small groups deepening their understanding of three-digit subtraction. I will also do interviews on the last day of the research study to determine the participants thoughts.
<b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.	I am anticipating that learners show improvement and are able to do this skill with ease. I think that they will because I will be using technology, and this will be done in small groups.  <b>Results: [insert here]</b>
<b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.	This will benefit Granite School District because it will give students a deeper understanding in math that will set them up for success in math as they get older.

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## Research Applications During the 2021-22 School Year

What is the effect of semi-competitive play on muscular endurance?

Investigator: Joshua Pappas  
 Granite administrator or teacher: Yes  
 IRB: Western Governors University  
 Proposal ID: 2021-046-Pappas  
**Status: Approved 05/10/2022**  
 Anticipated Start Date: 05/11/2022  
 Anticipated Completion Date: 05/30/2022  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The topic that I am proposing to perform action research on is the physical fitness aspect of muscular endurance and using an instructional intervention. Muscular endurance is the ability of the muscles to perform repeated actions for an extended time. The problem is that my students are struggling with muscular endurance. Low muscular endurance means that we get tired faster, which leads to a lack of desire to be physically active which lowers muscular endurance. The intervention I intend to use is semi-competitive play. Over the course of two weeks, or approximately 8 to 10 hours of instructional time, students will engage in play in semi-competitive games. They include games like ultimate football (football with ultimate frisbee rules), multi goal soccer, dribble tag soccer, box football, soccer and football lead up games where scores are not kept, teams play in tandem or against each other and the focus is on play rather than winning. Within games, after a given time, we will switch around teams you are competing with to keep the mindset on play and accomplishments rather than score. Games will be more task oriented rather than score keeping. Students will take pre and post fitness assessments using the Fitnessgram sit-up test and static squat test.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>Students will take pre and post muscular endurance fitness scores. They will be measured using the Fitnessgram sit-up test and the static squat test. Both scores will be compared using descriptive statistics using mean median and mode to determine the effect the intervention will have on the fitness scores. The intervention is semi-competitive play in our football / soccer unit.</p> <p>The students in my class will be given a consent form and parents will be emailed. About 1 week will be spent gathering forms then the pre assessment will be done. Students will participate in the muscular endurance pre-assessment using the sit-up test and static squat test, then for 8 to 10 class periods students will engage in one of the units with a focus on semi-competitive play activities. The unit will be soccer/football and will involve task-oriented activities rather than keeping score. After the intervention students will take a post assessment and the results will be evaluated using descriptive statistics.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The results that I am anticipating is that participating in semi competitive play will have a positive effect on muscular endurance scores. This means that we should see scores increase in our static squat and Fitnessgram sit-up test.</p> <p>Results: [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This research will benefit the school district in that it will add to the knowledge base out there that participating in semi-competitive activities in physical education can increase our muscular endurance and improve student health.</p>

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## Research Applications During the 2021-22 School Year

KingsPeakTech (LoomVue) SBIR Phase II 2021

Investigator: Kimkinyona Fox

Granite administrator or teacher: No

IRB: None

Proposal ID: 2021-047-Fox

**Status: Pending Review 08/15/2022**

**Anticipated Start Date: 09/01/2022**

**Anticipated Completion Date: 12/31/2022**

Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>LoomVue is a website application which transforms a targeted set of webpages into a diglot weave text, a blending of Spanish and English words together, to increase academic vocabulary acquisition and improve reading comprehension. The LoomVue website application will only translate a targeted preset set of webpages and will make those static translated pages available through the application. The app was developed and maintained by King’s Peak Technology (KPT), the prime recipient of the IES SBIR Phase II grant. WestEd serves as the research subcontractor for this project.</p> <p>This Phase II research study builds on the fully functional Phase I prototype by creating a web application, enhancing the machine learning engine, improving the instructor portal, and supporting ELs who do not read in a native language. KPT will work with WestEd to conduct a randomized control trial study to evaluate LoomVue with 6th grade English Language Arts teachers working with Spanish speaking ELs. The RCT will be conducted in 16-20 6th grade ELL classes: 8-10 Treatment classrooms, 8-10 Control classrooms.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>Out of all the classrooms recruited for the study, approximately half will be randomly selected for the treatment group and half will be selected for the control group.</p> <p>In the treatment group, prior to using LoomVue, teachers will be trained on how to setup and use the LoomVue application. The training will provide teachers with basic information needed to facilitate LoomVue use for their students, although teachers will be given leeway with regard to their implementation strategies. All students of participating treatment teachers will use LoomVue as part of their learning plan. Teachers will distribute opt-out forms to all parents/guardians of students in their class, offering them the opportunity to participate in the study. For all parents/guardians who opt-out of participation, their student’s data will not be used in the course of research. Prior to each student using LoomVue, students will complete a vocabulary knowledge, reading comprehension and reading attitudes pre-test and teachers will fill out a background questionnaire. Teachers will assign a curated word list (“vocab pack”) to students and students will use LoomVue at least 2 times per week for 8 weeks. Teachers will review student progress and performance in the teacher dashboard and complete a written log at least once per week. Due to COVID-19 safety procedures, researchers are not anticipating being able to visit classrooms for in-person observations. Instead, teachers will complete an observation checklist designed to confirm fidelity of implementation. Following the implementation period, students will be asked to complete a post-vocabulary knowledge and reading attitudes test, along with a survey describing their experience using LoomVue. Teachers will also complete a survey about their experience using LoomVue. Teachers will conclude their study participation by participating in an interview about their overall impressions of the LoomVue product. Survey data will be analyzed quantitatively and qualitatively, and interview data will be analyzed qualitatively to construct findings around the research questions.</p> <p>The control students will receive the pre- and post- reading, vocabulary and motivation assessments, and will engage in “business-as-usual” activities in their classroom. The control students will not receive access to the LoomVue intervention for the duration of the study. Control teachers will complete the background survey, attend study orientation training, and complete a weekly log during the course of the study.</p> <p>Potential teacher participants will be recruited through emails sent to eligible teachers. Teachers will be identified as potential participants based on their participation in prior studies with WestEd or LoomVue, through word of mouth, list purchases or data mining undertaken by WestEd researchers. Emails to potential participants will include basic information about the study such as its duration and time period and that the study involves use of LoomVue resources.</p>

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## Research Applications During the 2021-22 School Year

	<p>Teachers will be asked to complete a consent form. Parents of students will be asked to undergo an opt-out process.</p> <p><b>Teachers</b></p> <p>Teachers will initially be contacted via email. The email will inform teachers of an opportunity to participate in a study about ELs and will include information about some of the benefits such as technology to support reading in an in-class and distance learning environment, as well as a stipend. If the teacher is interested in participating in the study, they can click on the link and will be directed to provide some information about their qualifications. If selected for the study, the teacher participant will be asked to sign a consent form via electronic copy through SurveyMonkey (participants type their name into a web form to indicate their consent). The consent form will document in detail the goals, rationale, procedures, risks, benefits, and rights of participants in the study. It will also include a reference to recordings for teacher interviews. If participants are interested in learning more about the study, they will be able to call a WestEd staff member who is a part of the study to answer any remaining questions they have. Participants will have the opportunity to receive a PDF of the information letter and consent form.</p> <p><b>Students</b></p> <p>All eligible students of the classes of participating teachers will be offered the chance to participate. Teachers will be provided with an assent script to read aloud to students. Teachers will be asked to answer any student questions, and ensure that all students assent to participation in the study. For student participants, the research team will use a parental opt-out process, with study information letters and an opt-out form sent home to families. Eligible students will consist of Spanish-speaking ELD students of the participating teachers. Study information letters and opt-out forms will be distributed prior to the start of study activities. Parents will be provided a hard copy opt-out form in Spanish (or English if requested). The opt-out form provides information about the study including the purpose of the research, how data will be used, how confidentiality will be maintained, the study activities, potential harm to subjects, who to contact for more information and information that all participants have the right to refrain from answering any questions or to withdraw consent and discontinue participation without prejudicial action.</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>We hypothesize that the vocabulary knowledge, reading attitudes and reading comprehension assessments will demonstrate a statistically significant increase outcomes for treatment students. Impact analysis will be conducted on each student outcome (proximal reading comprehension score, distal vocab and reading comprehension score, average reading attitude ratings, and average science motivation ratings). We will employ hierarchical linear regression models, including a random effect term to account for the school, and fixed effect terms that include the condition indicator variable, while controlling for student (e.g., baseline scores, EL status, gender), teacher (e.g., experience), and school covariates (e.g., FRL%, stratum). Stepwise multiple hypothesis testing procedures will be applied to account for multiple comparison issues (Benjamini &amp; Hochberg, 1995). For all analyses, we will report the adjusted means, unadjusted standard deviations, and the analytic sample sizes for both conditions, and use those statistics to calculate effect sizes in Hedge's <i>g</i>, which will allow us to look beyond statistical significance and examine the size of the effects. To test whether student, teacher, or school characteristics moderate the intervention effect (e.g., whether the intervention closes achievement gaps for traditionally lower performing groups, such as FRL students), we will include interactions between condition and the moderators of interest (e.g., baseline outcome scores, gender, FRL).</p> <p>To study implementation, we will triangulate logs, surveys, interviews, and usage data and develop narratives of implementation models as well as qualitative descriptions of fidelity. Usage data will determine whether participants met fidelity targets (e.g., spent 30 minutes a week studying words in the Student Portal) and the extent to which teachers utilized dashboard and quiz information and students used the LoomVue App. Teacher interviews and surveys will provide context around what teachers found helpful and how it could be augmented. Fidelity targets will be summarized quantitatively to explore whether higher fidelity is associated with larger student gains. Within treatment groups, we will conduct descriptive statistics and correlations between fidelity and other school-based (e.g., school size, locale) and instructor-based (e.g., experience, baseline instructional dispositions) variables to explore whether certain characteristics are more likely to be associated with fidelity.</p> <p><b>Results:</b> [insert here]</p>

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### Research Applications During the 2021-22 School Year

<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This research will benefit Granite School District as it aligns with GSD’s strategic priorities to research and identify best practices associated with improved student learning. Many adolescent English Language Learners (ELs) lag behind their non-EL peers in every content area, largely due to difficulties with reading. WestEd is conducting research, funded by the U.S. Department of Education, to determine the feasibility and impact of the LoomVue web app, an application that transforms any webpage into a diglot weave text. For ejemplo, this frase blends English y Española words together. The highly accurate machine learning translation engine considers sentence context when making micro-translations of words. Instructors and ELs can use LoomVue in English classes and any content-area class that use the web (e.g., Science). LoomVue increases academic vocabulary acquisition, improves reading comprehension, and helps instructors monitor and intervene where students need additional support. Studies show that diglot weaves increase vocabulary, while reducing frustration when reading difficult texts. Participating in a randomized control trial study of LoomVue will allow GSD to review ‘what’s working’ with existing EL curricula and compare and contrast it with new evidence-based practices.</p>
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Teachers’ conceptions and enactment of disciplinary literacy in elementary science instruction: A comparative case study

Investigator: Melissa Mendenhall  
 Granite administrator or teacher: No  
 IRB: Utah State University  
 Proposal ID: 2021-048-Mendenhall  
**Status: Approved 06/29/2022**  
 Anticipated Start Date: 10/01/2022  
 Anticipated Completion Date: 12/15/2022  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>Studies exploring specific descriptions of teacher conceptions and enactment (i.e., teacher use of disciplinary literacy during instruction and teacher development of student disciplinary literacy) of disciplinary literacy during instruction are limited and research regarding disciplinary literacy in elementary science instruction are extremely limited. Additionally, the linkage between practitioner conceptions of disciplinary literacy and enactment has not been pursued.</p> <p>To address these gaps in the literature, the purpose of this study is to explore elementary teacher conceptions and enactment of disciplinary literacy during science instruction and the interactions between them to answer the following main research questions:</p> <ol style="list-style-type: none"> <li>1. What are fifth-grade teachers’ conceptions of disciplinary literacy in elementary science instruction?</li> <li>2. How do these teachers enact disciplinary literacy during elementary science instruction?</li> <li>3. In what ways do these teachers’ conceptions and enactments interact with one another?</li> </ol> <p>There is not intervention in this research. This study is merely to explore through interview and observation what is currently occurring related to disciplinary literacy in elementary science instruction.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>The research questions will be addressed through a comparative case study design. Again, the study explores teacher conceptions and enactment of disciplinary literacy in elementary science instruction.</p> <p>Study Details:        Participants will be</p> <ol style="list-style-type: none"> <li>1. Recruited to participate through an initial email and a follow-up email. They will click on a survey link within the email to complete the demographic questionnaire.</li> <li>2. Selected to participate based on matched characteristics from the recruitment demographic questionnaire.</li> <li>3. Emailed an informed consent document.</li> <li>4. Contacted and asked to set up a 45-60 min. interview at the convenience of the participant.</li> </ol>

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	<ol style="list-style-type: none"><li>5. Asked to set up a time for the researcher to observe science instruction (No audio or visual recording will be made. Researcher notes will be the only collected data from the observation).</li><li>6. Asked to provide three science lesson plans.</li><li>7. Asked to provide possible times for two short (20-30 min.) drop-in observations.</li><li>8. Asked to review the original data interpretations for accuracy.</li><li>9. Asked to review final summary interpretations for accuracy.</li></ol> <p>The two selected participants will receive a total of \$150 in VISA gift cards. This payment will be to offset the time required to participate in the study. Specifically, \$25 for participating in the initial interview, \$25 for preparation time for each of the three lesson plan samples, \$25 for a member check to assure accuracy of original data interpretations, and \$25 for a member check of accuracy of final summary interpretations of data. Payment will be provided once the final data check has been completed. If the participant withdraws at any point, he/she will be compensated for the parts of the research that were completed prior to withdrawal.</p> <p>This research presents minimal risk to participants. One potential risk is that participants may feel uncomfortable about a question that is asked by the researcher. Participants will be notified that they do not have to answer any question and may withdraw from the study at any point.</p> <p>Another potential risk is a breach of anonymity. To ensure participants stay anonymous and confidentiality is maintained, data will be securely stored on a password protected computer in a locked drawer in a restricted-access office. Each participant will be assigned a pseudonym. All data will be stored in a file under that identifier. Only the informed consent form will contain identifiable information. All identifying data will be destroyed three years after the study is completed.</p> <p>Additionally, to ensure that classroom instruction is only minimally affected, the interview will be scheduled outside of classroom instructional time at the convenience of the teacher. During possible observations, the researcher will sit in the back of the room in a not traffic flow area and function as a silent observer.</p> <p>This is a qualitative study that seeks to explore teacher instruction and enactment to describe what is currently occurring in specific cases. In this study, a case is represented as teacher science instruction in a fifth-grade classroom. The theoretical framework for this research is that learning is actively built (constructivism) and takes place in a social context (sociocultural theory). Thus, for the researcher to learn what is occurring, she must be able to talk to teachers and observe instructional enactment.</p> <p><b>Describe your research method(s)</b></p> <p>The process for selecting the specific participants initially utilizes an email sent to fifth-grade teachers telling about the research and inviting them to apply to participate by completing a short questionnaire that provides demographic information such as years of teaching experience, level of exposure to the new Utah Science with Engineering Education (SEEd) Standards (USBE, 2019) as indicated by participation in professional development opportunities, level of educational degree obtained, and gender. This questionnaire is attached. The purpose of the questionnaire is to match teachers on like factors. If interested, participants can express their interest to be involved in the study by clicking on a link to fill out this Qualtrics Survey questionnaire.</p> <p>Data will be collected through an interview and one observation with two potential short follow up observations. Additionally, three lesson plans will be collected.</p> <p><b>Timeline:</b></p> <p>This research would take place between October 1 and December 15 of 2022. The sequence of events is listed in the answer section of the prior question.</p> <p><b>Research Methodology:</b></p> <p>This is a comparative case study as described by Thomas, 2011. The subject is disciplinary literacy. The purpose is exploratory. The approach is theory-building, meaning the researcher is seeking to learn what is occurring. The process is a parallel, comparative case study with two fifth-grade teachers from this district as participants.</p>
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<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>I am anticipating that the results will provide insights into what is currently occurring in elementary science instruction related to disciplinary literacy. This is important because the new Utah Science with Engineering Education (SEEd) Standards were developed based on new research from A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas (NRC, 2012). This research heavily includes disciplinary literacy as a shift to science instruction through the use of the three-dimensions of science instruction (i.e., practices, crosscutting concepts, disciplinary core ideas).</p> <p style="color: red;">Results: [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>This information may help both in-service and pre-service professional learning providers in Utah as they determine what teachers know and use related to disciplinary literacy and therefore what supports may help educators to develop disciplinary literacy during elementary science instruction.</p> <p>Building teacher capacity to develop disciplinary literacy during elementary science instruction can deepen student understanding of science and thus increase their ability to participate meaningfully in issues related to science in their communities and further participate in science in college and careers if they so choose.</p>

The effectiveness of the Prevent, Teach, Reinforce (P-T-R) model in combination with the use of a practical functional assessment approach in general education classroom settings on the occurrence of student prosocial and problem behaviors.

Investigator: Molly Dwyer  
 Granite administrator or teacher: Yes  
 IRB: Granite School District  
 Proposal ID: 2021-049-Dwyer  
 Status: Approved 06/29/2022  
 Anticipated Start Date: 08/18/2022  
 Anticipated Completion Date: 06/02/2023  
 Results: (TBA)

<p><b>Describe the purpose of your research.</b> What concern, problem, or curiosity did your research investigate?</p>	<p>The purpose of this study is to analyze the effectiveness of the Prevent, Teach, Reinforce (P-T-R) model in combination with the use of a practical functional assessment approach in general education classroom settings on the occurrence of student prosocial and problem behaviors.</p> <p>Prevent-Teach- Reinforce (P-T-R) model, created by Dunlap (2010a) et al, is an evidence-based program utilized by the Granite School District BCBA's. P-T-R outlines a collaborative approach to provide ongoing support for a school team to create and implement behavioral interventions and make data-based decisions. The P-T-R model focuses on using a student-centered team that includes a behavioral consultant, school administration, teacher(s) and other school personnel that support the student. This team then follows a 5-step process: 1) meeting and goal setting, 2) collecting data, 3) conducting a functional behavior assessment (FBA), 4) creating a behavior intervention plan, 5) progress monitoring and data based decision making (Dunlap et al., 2010a). As one example of several studies, Dunlap, et al. (2010b) analyzed the effectiveness of the P-T-R model on the serious problem behaviors of two students in a school setting. Their findings showed that the model was effective in reducing problem behaviors and increasing desired behaviors by the students and teachers showed high implementation fidelity. A randomized controlled study of more than 200 students found that the P-T-R model was effective and viewed as socially valid by implementers in the general education setting due to its standardized process, effective individualized interventions based on FBA data, and meaningful and desired outcomes for both students and teachers (Iovannone et al., 2009).</p> <p>The third step of the P-T-R model consists of conducting an FBA to determine the function, or purpose, of each of the student's target behaviors (Dunlap et al., 2018). An FBA is categorized as an indirect and descriptive analysis where an interview is conducted and behavioral data (ABC) is collected through observations and analyzed (Hanley, 2012). While an FBA seeks to classify the function of the behavior by checking a "functions box", a practical functional assessment (PFA), also referred to as the interview-informed synthesized contingency analysis (IISCA), verifies and demonstrates control of the behavior(s) and confirms what is hypothesized (Hanley, 2019). A PFA</p>
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	<p>applies an open-ended interview to identify and define the target behavior(s) and guide the control and test conditions of the analysis (Hanley et al., 2014, Ghaemmaghami et al., 2015). Once the interview is complete, a synthesized functional analysis is conducted where all reported reinforcers are tested in one condition (Jessel, Hanley, &amp; Ghaemmaghami, 2016). This PFA can be conducted in an average of 25 minutes, with the entire analysis process averaging 75 minutes (Coffey, et al., 2019). Our research team has determined to integrate the PFA in the P-T-R model to ensure the school team is able to demonstrate functional control of the target behavior(s) in a short amount of time and can create skill-based behavior plans that are applicable in the classroom environment and are socially valid for the student.</p>
<p><b>Describe your research method(s).</b> Provide a brief description of the participants, the timeline of what was done, and the data that was collected.</p>	<p>This study will be conducted using a non-concurrent multiple baselines across participants design. “The non-concurrent multiple baselines across participants design consists of a related series of A-B (baseline-intervention) sequences conducted across participants at different points in time” (Cooper, Heron, &amp; Heward, 2017). Harvey (2004) et al. found that, “although concerns that non-concurrent multiple baseline designs are less rigorous than traditional multiple baseline designs, the flexibility that the design allows fits the complex setting in education.” Due to the unpredictable timing between referrals to the general education behavior team, we feel that this design is best suited for this study. A non-concurrent multiple baseline design also allows behavior change to be analyzed without needing to withdraw the intervention. Student baseline behavior data will be compared to target behavior rates after intervention implementation. The data will be analyzed to determine if there is a functional relationship between the behavior change and the intervention created through the P-T-R model.</p> <p><b>Describe your research method(s)</b></p> <p>Cases in Granite School District in general education settings are referred to the Board-Certified Behavior Analysts (BCBAs) by the school team periodically throughout the year when they have exhausted their resources within the school to support a student’s behavioral needs. The referrals are screened for appropriateness by a referral committee. Cases are accepted under the following conditions: (a) the student has challenging behaviors that are high in frequency, duration, and/or intensity (b) the behaviors to be changed are socially valid for the student (c) the student does not currently have an IEP (d) Tier II and III interventions have been planned and implemented for the student and (e) 80% of the student’s class responds to Tier I behavior supports.</p> <p>An automated response will be displayed when the school team submits a referral to inform them of the research opportunity. The assigned BCBA will provide a detailed description of the research project with the team at the initial meeting. The team will have the opportunity to be included in the research if they choose, however, the team will receive the same support from the BCBA regardless of participation in the study. If the school team agrees to join the study, all the team members will sign a consent form. A Parent/Guardian Permission form will be reviewed with a parent/guardian of the student and the option to participate will be given. If parent/guardian permission is given, a Child Assent form will be reviewed with the student in understandable terms. These forms are attached to this application.</p> <p>After cases are accepted and assigned to one of the BCBAs, an initial meeting will be held with the school team (Step 1 of the P-T-R model). During the initial meeting, an Open-Ended Assessment Interview (Hanley, 2009) will be conducted with the school team, and parents/guardians if available and applicable. The interview will identify the target behavior(s), replacement and desired behaviors, and gather information on potential antecedents and reinforcers influencing the target behaviors. Team norms, roles and responsibilities, and level of BCBA involvement will also be discussed during the initial meeting.</p> <p>Baseline behavioral data will be collected during observations conducted by the BCBA and/or members of the behavioral team (Step 2 of the P-T-R model). A minimum of three baseline data points are required for the non-concurrent multiple-baseline design. Observations will be conducted by the observer sitting in a non-obtrusive location while being able to clearly observe the student’s behavior. Data collection methods (frequency, duration, magnitude) will be determined based on the topography and other characteristics of the behavior. Interobserver agreement (IOA) will be calculated using interval by interval calculations and will be conducted during 30% of sessions in each phase. Observers will use the same data forms and will observe at the same time. IOA will need to be at 80% for occurrence and nonoccurrence or above for each session; lower percentages will result in discussions among and further training for observers.</p> <p>Following baseline data collection, a practical functional analysis (PFA) will be designed using the information gained from the interview in step 1 (Step 3 of the P-T-R model). After the initial meeting and two observations, a practical functional analysis (PFA) will be conducted. A PFA</p>

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	<p>consists of a control session and test sessions. Unlike a typical FA, a PFA synthesizes all test conditions into one session. This single session modifies the multiple isolated test conditions into a single simultaneous testing condition in which two or more contingencies are assessed in around 23 minutes (Jessel et al., 2016). See the attached IISCA Data Sheet - Performance-Based Criteria form for analysis design and data collection methods (Hanley, 2019).</p> <p>The information gleaned from the PFA will be used to create an individualized behavior intervention plan (BIP) (Step 4 of the P-T-R model). Although each behavior plan will be individualized based on the PFA outcomes, the BIPs will all follow a P-T-R structure that includes prevention interventions, teaching interventions, and reinforcing interventions (Dunlap et al., 2010). Prevention interventions will modify the environment to prevent the target behavior(s) while providing opportunities for prompting the replacement behavior(s). Teaching interventions will provide direct instruction and practice for teaching the replacement behavior(s). Finally, reinforcing interventions will use function specific reinforcement to increase the occurrence of the replacement behavior(s) in the future while decreasing the target behavior(s). In order to ensure the BIP is implemented with fidelity, the BCBA's will offer coaching for all team members expected to implement the plan.</p> <p>In order to determine a functional relationship between the BIP and change in target behavior(s), data will be collected and analyzed (Step 5 of the P-T-R model). The three types of data collected will be the fidelity data, prosocial and problem behavior data, and social validity data. Fidelity checks will be conducted to ensure the plan is being implemented with at least 80% fidelity to be utilized in this study. IOA expectations for fidelity will be the same as the IOA criteria for behavior data. Behavioral data on prosocial and problem behaviors will be collected utilizing the same methods in baseline for each student. Data based decisions regarding whether to continue with the current plan, or to fade or intensify the plan, will be made at weekly or bi-weekly team meetings. Finally, social validity will be assessed using the Treatment Acceptability Rating Form - Revised (TARF-R) (Reimers &amp; Wacker, 1992).</p>
<p><b>Summarize your expectations and the results.</b> Provide a brief description of your findings and compare those to what you were anticipating.</p>	<p>The results of the study will be analyzed using a visual analysis of the non-concurrent multiple baseline design. The visual analysis will involve comparing level, trend, variability, immediacy, and overlap across and within phases for each participant and between participants. We hypothesize that the findings will show desired change in students' prosocial and problem behavior(s). The behavioral change demonstrated will have a functional relation with the intervention(s) implemented based on the P-T-R interventions chosen based on the PFA.</p> <p><b>Results:</b> [insert here]</p>
<p><b>Benefit to Granite School District.</b> Describe how your research will benefit Granite School District.</p>	<p>Potential benefits to Granite School District include increased ability for students to engage within the school community and provide a standardized and efficient process for supporting students requiring additional supports in general education settings. This study also provides the same potential benefits to other professionals in the applied behavior analysis, school psychology and education communities who support students in the general education setting with behavioral support needs, as there is currently limited research available in this area. If this study meets our expectations, further studies can also be conducted at a larger scale or with other populations.</p>