

EDUCATIONAL INTEGRATION



THE UTAH STATE BOARD OF EDUCATION
Report to the Education Interim
Committee

Utah Leading through Effective, Actionable, and Dynamic Education (ULEAD) Annual Report

2020-2021 Report

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**STATUTORY
REQUIREMENT**

U.C.A. Section 53E-10-702

requires Utah Leading through Effective, Actionable, and Dynamic Education to: (1) gather and explain current education research in an electronic research clearinghouse for use by practitioners; (2) initiate and disseminate research reports on innovative and successful practices by Utah LEAs, and guided by the steering committee, practitioners, and policymakers; (3) promote statewide innovative collaboration by: (a) identifying experts in areas of practice; (b) conducting conferences, webinars, and online forums for practitioners; and (c) facilitating direct collaboration between schools; and (4) (a) report to the Education Interim Committee and policymakers on innovative and successful K-12 practices in Utah and other states, prioritizing practices in Utah; and (b) in the report, propose policy changes to remove barriers to implementation of successful practices.

Utah Leading through Effective, Actionable, and Dynamic Education (ULEAD) Annual Report

EXECUTIVE SUMMARY

The Utah Leading through Effective, Actionable, and Dynamic Education (ULEAD) Annual Report outlines the many innovative research projects that the ULEAD team undertook in 2021. Descriptions of each report as well as links to the full reports are included. These reports and others are available on the ULEAD website. ULEAD found that it was too early for policy recommendations so included in the report are research-informed observations that could lead to policy recommendations in the future.

2021 ULEAD Report to the Education Interim Committee

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 - Guiding Vision Resources
- Samples of 2020-21 published and posted ULEAD research reports. These reports and many others are available on the ULEAD website
 - Promising Practice: Mathematics Transition Success in Rich County School District - Link: <https://www.schools.utah.gov/file/4986dbad-2031-4f8e-9c0d-5fded60f9f1a>
 - Dissertation Infographic Example from USU Student - Examining Different Patterns of Children’s Early Dual Language Development and Non-Verbal Executive Functioning - <https://www.schools.utah.gov/file/5af8a81a-6183-4e2f-890a-412d096713b2>
 - Planning Rigorous and Relevant Instruction Toolkit (actionable tools for Utah Effective Teaching Standards) <https://www.schools.utah.gov/file/b0cd1975-25cc-4e29-bd1f-080d1c60eef4>

2021 ULEAD Report to the Education Interim Committee

Executive Summary:

This report is provided to the Education Interim Committee to inform committee members on the progress being made by ULEAD to identify, describe, and replicate bright-spot practices (positive outliers) across the state. As evidence-based practices are identified and actionable tools, templates, and infographics created, all become a part of the fully accessible online clearinghouse. While the pandemic has created unexpected delays for our higher education research partners (11 interagency agreements and 2 contracts), ULEAD initiated activities and reports have continued with occasional online/virtual accommodations for participants.

The annual working summit for identified highly effective educators and teams of educators was conducted in two summits to create the *Leadership for Mathematics: ULEAD Effectiveness and Innovation Working Summits [report](#)*. The actionable evidence-based toolkit series aligned with the Utah Highly Effecting Teaching Standards has been completed and compliments the previous toolkit series aligned with the Utah Leadership Standards. The electronic clearinghouse now (July 2021) includes over 40 ULEAD initiated effective, innovative, efficient, and/or promising practice reports with dozens of associated templates, linked resources, and references. There are also over 30 direct links to other online research resources and search engines, along with multiple links to evidence-based resources associated with Utah priorities identified by the ULEAD Steering Committee and aligned with stakeholder input.

As schools were learning from the early challenges and successes of remote learning and accommodations for safe in-person learning, ULEAD added links to external online/distance learning resources and developed three evidence-based infographics, *How to Succeed in Distance Learning: 5 Tips for Families; Students; and Teachers*. These infographics were syndicated and electronically published by multiple partners interested parties across the country. While the lack of comparable student achievement data for the spring of 2020 and the yet to be fully understood comparability of the spring 2021 student performance data have complicated the identification of bright-spot practices, it is clear that as we all get better at finding, describing, and sharing the successes in our Utah public schools, the envisioned role of the legislature's ULEAD initiative will play a critical part in continuous, collaborative, and systemic school improvement.

ULEAD Background:

Utah Leading through Effective, Actionable, and Dynamic (ULEAD) Education was created by legislative action during the 2018 General Session of the Utah State Legislature. Sponsors of the Bill envisioned the creation of a research clearinghouse and development of accessible electronic resources designed to improve practices in the public schools of the state. An emphasis is placed on innovative, effective, and efficient practices that can be shared and replicated in comparable schools. Further, an understanding that these resources need to be dynamic and actionable are at the heart of the ULEAD mission.

"There is created the Utah Leading through Effective, Actionable, and Dynamic Education, a collaborative effort in research and innovation between the director, participating institutions, and education leaders to: gather and explain current education research in an electronic research clearinghouse for use by practitioners; initiate and disseminate research reports on innovative and successful practices by Utah Local Education Agencies (LEAs), and guided by the steering committee, practitioners, and policymakers; promote statewide innovation and collaboration...and...propose policy changes to remove barriers to implementation of successful practices." [link to original bill](#)

ULEAD Steering Committee:

The ULEAD Education Steering Committee consists of fifteen members (including the director) who *"discuss prospective and current ULEAD projects and findings; consult with and make recommendations to the director to prioritize ULEAD reports and areas of focused research; facilitate connections between the director and Utah's political, business, education technology, and academic communities; and make recommendations to improve gathering, retaining, and disseminating*

education data and research and evaluation findings for use by participating institutions and other education policy researchers, including data managed by the Utah Data Research Center."

March 2021 Committee Members

Committee Member From....	Name
"the director" (Chair)	McKell Withers
"one member" - appointed by chair of the board	James Moss – USBE Board Member
"state superintendent" (or designee)	Tiffany Stanley – Chief of Staff
"staff director of the State Charter School Board" (or designee)	Jennifer Lambert – Staff Director
"one member" - appointed by the office of the governor	Britney Cummins – Education Advisor
"one member (superintendent)" - appointed by the director	Paul Sweat – Wasatch County (USSA)
"one member (local school board)" - appointed by the director	Mary Nielson – USBA (past president)
"principals or other public school leaders (not charter)" - by the director	Gregory Wilkey – Davis County (UASSP)
"principals or other public school leaders (not charter)" - by the director	Kate Ross – Utah County (UAESP)
"principals or other public school leaders (charter)" - by the director	Kelli Booth – NUAMES
"principals or other public school leaders (charter)" - by the director	Deborah Swensen – Hawthorn Academy
"educators (with current license)" - nominated LEA/appointed director	Kellie May – Utah Teacher of the Year
"educators (with current license)" - nominated LEA/appointed director	Ashley Webb – Mountain Heights Academy
"members (citizens or business)" - nominated public/appointed director	3/10/21 (currently vacant)
"members (citizens or business)" - nominated public/appointed director	Mark Bouchard – CBRE (retired vice president)

Bright-Spots/Positive Outliers:

Central to meeting one of the essential components of ULEAD is the development of means and methods to identify uniquely successful educators, strategies, materials, structures, and systems. The following examples describe the methods used to identify the practitioners invited to the working summits for early literacy (K-3) and elementary mathematics (grades 3-6).

Early Literacy - Initial screening for potential school teams to invite to the summit was accomplished by reviewing Utah school accountability measures (i.e., student proficiency in specific content areas and student growth) associated with each school over a three-year period (2015–2018). Potential schools were flagged when they had received more than one positive accountability indicator in one or more of the measured categories (i.e., student proficiency in English language arts, mathematics, and science, and/or student growth). Starting with this list of schools, multiple year reading proficiency rates for their students in grades K–3 were reviewed to identify the schools in this group that performed the highest in early literacy, based on DIBELS/Acadience (Dynamic Indicators of Basic Early Literacy Skills) data. To avoid potentially missing positive outliers, all K–3 reading proficiency rates for three years for all Utah public schools were reviewed by grade level each year and for school and/or student cohort trends over the same three-year period.

Positive outliers were identified from three demographic bands, which were measured based on the percentage of students eligible for free or reduced school lunch. In order to select an economically diverse group of school teams, four to five positive outlier schools were identified from the following three categories: schools with 11–35 percent of students eligible for free or reduced-price lunch; schools with 36–55 percent eligible; and schools with 56 percent and above eligible. The analysis of achievement data was performed within each of the three targeted poverty bands to ensure that there would be diverse schools invited to the summit that had demonstrated success in their early literacy efforts and that would be able to offer credible insights and provide support to demographically similar schools across the state.

After identifying 30 potential school teams (with a total of 150 potential participants) to invite to the summit, the collaborative leadership team determined that having a total of 60–75 participants (4–5 teams or 20–25 participants per band) would allow for both representation across the bands and deep conversations within job-alike groupings (i.e., groups of teachers, literacy coaches, and principals). The ULEAD Education director directly contacted the 4–5 most promising

schools within each band both to thank them for their effective work in early literacy and to extend an invitation to participate in the summit. The 13 school teams that participated in the working summit came from 10 different school districts (LEAs) and represented urban, suburban, and rural communities.

Elementary Mathematics - ULEAD investigated statewide mathematics achievement data (RISE/SAGE) to identify positive grade-level learning outcomes, which led to identifying over 300 potential bright-spot mathematics teachers in grades 3–6 across the state. The team identified students who were improving in mathematics achievement over time (five-year trend) and/or demonstrated unique improvement for the 2018–19 school year (top 2 percent of grade-level cohorts in the state). Eighty grade-level teams from 77 schools (approximately 250 teachers) were initially identified for their five-year positive trend, and 52 grade-level teams from 50 schools (approximately 150 teachers) were identified for their uniquely positive mathematics improvement for the 2018–19 school year. From this group of nearly 400 teachers, only 84 were teaching at the same school and grade level in the fall of 2020. All 84 were invited to respond to the survey and attend the virtual summit. Thirty-one of these 84 teachers responded to the survey. Twenty of these respondents attended the summit, representing 16 elementary schools.

Utah Higher Education Research Partners:

ULEAD priority research topics are identified through consensus in consultation with the steering committee. Requests for proposals (see appendix A) are distributed to all public and private higher education institutions in Utah that have worked with our public schools. Projects are approved and supported by either an interagency agreement (state institutions) or contract (private institutions). As the projects are completed and/or a progress report is made available, a link will be provided on the research partners [webpage](#). Note: The COVID-19 pandemic and associated school disruptions have necessitated some timeframe adjustments for all sponsored projects and no-cost timeline extensions have been approved when appropriate.

2019-2020 Current ULEAD Sponsored Projects and Partners

Half-day, Extended-day, and Full-day Kindergarten Outcomes in the State of Utah

University of Utah and Utah Education Policy Center (UEPC) – Andrea Rorrer, Principal Investigator

This project will identify factors that maximize the effectiveness of kindergarten and the outcomes that are expected with different kindergarten structures and features. Research Objectives and Study goals are: 1. document the implementation and outcomes of half-day, extended-day, and full-day kindergarten class types in the state of Utah; and 2. examine various issues that have been raised in the full-day versus half-day kindergarten discussion. Findings from these studies will provide actionable information about kindergarten practices and outcomes across the state that can be used for improving program quality, as well as to inform policy development aligned with the current needs and desired outcomes in the range of kindergarten programs and classrooms in Utah. In Phase I, we will better understand the landscape of practice in half day and full day kindergarten. In Phase II we will identify the differences in longitudinal outcomes for participants of half or full day kindergarten. In Phase III, we will study the impact of half day, extended day and full day kindergarten on student well-being and development.

Promoting Utah Teacher Retention Through Effective Classroom Management

University of Utah and Utah State University – Keith Radley, Principal Investigator; Aaron Fisher and Tyler Renshaw, Co-Principal Investigators

Disruptive behavior in the classroom is associated with teacher stress, burnout, and exiting the teaching profession. Recent research indicates that implementation of evidence-based classroom management procedures is associated with improvements in teacher self-efficacy and reductions in burnout, in addition to improvements in student academic engagement. This study will evaluate the effect of implementation of an evidence-based classroom management procedure, the Good Behavior Game, on teacher and student outcomes. This evaluation will be the first to investigate whether implementation of such procedures is associated with teachers' intentions to return to teach at the same school. If found to be effective, the procedures investigated may provide a model for addressing teacher retention in Utah. The

current project serves as an extension of previous lines of research, as well as a novel synthesis in which the effect of classroom behavior management interventions is evaluated in terms of both student and teacher outcomes.

Reading and Anxiety Reduction

Brigham Young University – Elizabeth A. Cutrer, Principal Investigator; Melissa A. Heath, Co-Principal Investigator

This project is designed to help children who are struggling when learning to read manage and cope with anxiety. Our efforts will focus specifically on how children’s anxiety interacts with early reading skill development. Our research team will train each participating 2nd grade classroom teacher to use carefully selected children’s picture books (stories) that include associated lesson plans and activities. Each book will contain a story that models anxiety-reduction skills and stress-management strategies. We will use the Multi-dimensional Anxiety Scale for Children (MASC-R) to pre- and post-survey children and parent pairs to assess reading anxiety levels in participating 2nd grade students before and after the intervention. This data will be correlated with district-provided, standardized student outcome measures for reading.

Successful Utah Efforts that Demonstrate Meeting Differentiated Student Learning Needs

Utah State University (USU) – David Forbush, Principal Investigator

This project will identify high and low performing elementary schools based on mathematics RISE scores for students with disabilities. Using compare and contrast analysis, the project will seek to identify what content, process, and product differentiation strategies exist that differ between high and low performing schools, as well as what transportable differentiation processes and systemic capacities exist that differ between these schools. Researchers will identify high and low performing schools and invite staff to participate. School staff will respond to survey tools and will be observed in the classroom by the principal investigator and an assistant.

Trauma-Informed Problem Solving (TIPS)

Southern Utah University – Jennifer McKenzie, Principal Investigator; Brianne Kramer, Co-Principal Investigator

Trauma-Informed Problem Solving (TIPS) aims to incorporate training in trauma-informed practices and classroom-based coaching to improve internal capacity in school districts to meet the needs of students. Specifically, teachers will be trained to observe and coach each other in the use of evidence-based practices in classroom management that correspond to the literature in trauma-informed practices. TIPS addresses two critical needs in Utah: emotional and mental health supports in Utah schools and support systems that positively impact teacher retention rates. The purpose of the TIPS project is to create a training and individualized peer coaching model in trauma-informed classroom management and determine its effects on student behavioral outcomes and teacher efficacy in classroom management.

[Coaching in Trauma-Informed Classroom Management Report](#)

2020-2021 Current ULEAD Sponsored Projects and Partners

Student Achievement, STEM Course-Taking, Graduation, and Postsecondary Outcomes in Utah Charter Schools

University of Utah – Yongmei Ni, Principal Investigator; Andrea Rorrer and Amy Auletto Co-Principal Investigators

This project seeks to provide insight into the unique roles of charter schools and locale in students’ access to secondary education in Utah, with a particular focus on STEM education opportunities. Informed by an opportunity-to-learn conceptual framework, we link secondary education opportunities with students’ experiences in high school, secondary outcomes, and post-secondary outcomes.

Measuring the Impact of Multi-tiered School Mental Health Supports on Rural Student Wellbeing

University of Utah – Aaron Fischer, Principal Investigator; Tyler Renshaw and Chathuri Illapperuma, Co-Principal Investigators

This project seeks to evaluate the effectiveness of a multi-tiered school mental health program on rural student wellbeing. The school mental health program will provide technical assistance in developing and setting up social-emotional curriculum and as well as aligning services within schools and between schools and community supports (including

community mental health, physicians, psychiatrists). If found to be effective, the procedures investigated may provide a model for addressing student wellbeing in rural areas and promote an effective model for setting up school mental health systems across Utah.

Utah Principal and Teacher Well-Being During the COVID-19 Pandemic

University of Utah – Laura Rogers, Principal Investigator

The proposal seeks to study the well-being of education professionals across the state in order to identify (a) patterns in well-being across school and educator contexts, and (b) exemplar schools that may offer lessons for how well-being can be nurtured and sustained. The ultimate goal of the study is to provide information that state officials and practitioners can use to implement policies and initiatives aimed at improving educator well-being.

Bright Spots in Utah’s Implementation of Expanded Distance Learning

University of Utah - David Woo, Principal Investigator; Laura Rogers, Co-Principal Investigator

This project proposes to work with Utah Virtual Academy (UTVA) in studying how students respond to educational experiences that are specifically designed for delivery in an online environment. Because of UTVA’s unique position as an online-only academy, it is an ideal setting for identifying and understanding “bright spots” in online teaching and learning. By isolating these bright spots, we will distill best practices and principles that can be leveraged and scaled up in public schools around the state. Additionally, our analysis can provide simultaneous feedback to UTVA on its most successful practices and structures to help it further refine its program.

Promoting Equity in Online Student Engagement Through Technology Enhanced Zoom Classes

University of Utah – Aaron Fischer, Principal Investigator; Michael Young and Chathuri Illapperuma, Co-Principal Investigators

This project will develop and evaluate the efficacy of an augmentative online teaching software to improve student engagement during Zoom classes. Teachers will receive summative feedback regarding student engagement from the software and use that feedback to modify their engagement strategies for students who are less engaged. If found to be effective, the procedures investigated may provide a model for addressing online student engagement during Zoom (or similar software) classes.

Early Childhood Equity and Access Case Study

University of Utah – Mary Burbank, Principal Investigator

This project will entail an evaluation of the impact of an early childhood preparation program for children as they enter kindergarten. Funding through ULEAD will allow an evaluation team to review existing student performance data, in coordination with SLCS, to determine the effectiveness of past summer experiences. Data generated during summer 2021 will allow for an analysis of outcomes from the perspectives of students, and their families, as well as instructors and program leaders.

Proactive Clearinghouse Content Team

Based on the USBE Strategic Plan, the Governor’s Education Roadmap, and stakeholder input, ULEAD developed evidence-based clearinghouse content in partnership with Hanover Research. These Utah focused secondary research reports, briefs, and infographics provide proactive guidance for Utah educators, leaders, and policymakers. Over time, Utah-centric reports, tools, templates, and resources will be expanded. The principal investigator and partner from Hanover Research is Dr. Marriam Ewaida.

ULEAD Collaborative Research Leadership Team (Working Summit Planners and Facilitators)

Dr. Kim Austin, REL West

Dr. Janice Bradley, University of Utah

Dr. Parker Fawson, Utah State University

Dr. Nikola Filby, REL West
Dr. David Forbush, Utah State University
Dr. Cori Groth, University of Utah
Dr. Andrea Rorrer, University of Utah
Dr. McKell Withers, ULEAD Education

Early Policy Implications:

While it is too early to offer specific policy recommendations from the bright-spot/positive outlier work thus far, the following are research-informed observations that appear to have merit:

- Effective Professional Learning Community (PLC) work is a consistent factor across all K-3 early literacy teams identified and all 3-6 grade mathematics grade-level teams identified
- There are noticeable positive outcome differences that can be achieved with high quality instructional materials used effectively (not all materials being used are high quality)
- Professional learning supports for adults and academic learning supports for students are both important
- Utah doctoral students may be able provide another source for finding effective, innovative, efficient, and/or promising practices by sharing their dissertation work in a more consumable way (see example included in Appendix B from a USU student)

APPENDIX A



Collaborative Priority Research Announcement and Invitation

October 9, 2020

Call for Utah Institutional Research Partners

ULEAD Education Seeks Proposals from Utah Institutional Partners for Priority Research

Deadline: 11/20/2020

With support from the Utah State Legislature, the Utah Leading through Effective, Actionable, and Dynamic (ULEAD) Education initiative seeks proposals from Utah researchers to conduct priority research projects that will identify innovative, effective, and/or efficient practices in Utah public schools. The enacting legislation for ULEAD anticipates that identified research partners will “*initiate and disseminate research reports on innovative and successful practices by Utah Local Education Agencies (LEAs).*” *These reports will be used to “promote statewide innovation and collaboration” and when appropriate, to “propose policy changes to remove barriers to implementation of successful practices.”*

This year’s funding is provided to researchers and research teams who will enter into an Interagency Agreement with ULEAD and the Utah State Board of Education (USBE). Based on the promising work underway with the first set of four priority research projects, the following priorities have been added to this new invitation for research partners and collaborators.

ULEAD Fall 2020 Priority Research Topics:

- **Equity and Access:** bright spot case study with recommended model for Utah
- **Systemic Continuous School Improvement:** bright spot case study with template, reflection tools, proactive data protocols, resource guide, capacity building recommendations, etc.
- **Blended Learning:** bright spot case study with recommended grade/age-range model(s) for Utah
- **Overcoming Learning Losses:** bright spot case study with recommended model for Utah

Research Grant Awards

Proposals from individuals for Utah Institutional Research Partner Grants will range from \$5,000-15,000, while those who propose multi-institutional collaborative projects are eligible for partnership grants ranging from \$10,000-25,000. Additional award amounts may be considered for necessary travel, access to critical personnel (e.g. substitute costs), quasi-experimental designs, and/or implementation/replication activities, tools, or templates. Research Grantees may not accept concurrent grant or fellowship awards from another agency, foundation, institution or the like for the same project that is funded by the ULEAD Utah Institutional Research Partner Grants program. Although, projects that can build upon or extend other projects are encouraged. At least one award for each of the four priorities listed above will be funded.

The proposed research project must include analysis of outcome data, including, but not limited to, Utah student accountability measures, standardized test scores of Utah students, and/or any available Utah student performance data that can be objectively used to identify schools or programs that demonstrate innovative, effective, and/or efficient practices with similar populations. (See Submission Information below.)

Applicant Eligibility

Utah Institutional Research Partner Grants are available for faculty at Utah institutions of higher education and Utah based postdoctoral researchers and/or other doctoral-level scholars in Utah. Proposals are encouraged from the full range of education research fields and other fields and disciplines engaged in education-related research, with a preference given to researchers who have demonstrated successful collaboration and/or positive engagement with Utah public school practitioners.

Data Access

Prior to receiving funding, the research team must provide documentation that they have permission to use the data necessary to complete the project. Where applicable, this may include school/district-level institutional review approval, other agency data share agreements, and/or appropriate Institutional Review Board approval.

Research Dissemination

All findings, reports, templates, videos, data, and data-related products produced under the ULEAD Utah Institutional Partners for Priority Research agreements will be publicly available and accessible through the ULEAD Clearinghouse.

Project Dates

The research project should start as soon as possible after the award is granted, with the expectation that the project should be completed within 6-12 months of the agreed to starting date.

Evaluation Criteria

Evaluation criteria include the scope of the proposed project, strength of the methodological model and proposed analysis, research significance, ability to improve practice, alignment with priorities, ability to replicate or inform current practices, and the qualifications of the research team to carry out the proposed work, and, when available, evidence of previously successful interactions with Utah K-12 practitioners.

Reporting Requirements

Research Grantees will be required to submit a brief (1-3 page) progress report within the first three months of the project start date and give a presentation of the report status and/or findings to a convening of Utah researchers in October 2019. The final report consists of a one-page summary (infographic format if possible) with findings and suggestions for practitioners; an articulation of any limitations or barriers to replication of identified practices as well as detailing considerations that need to be addressed to sustain such practices; a presentation (which may be recorded) to identified stakeholders; and, a completed Innovative and Effective Practice Report for the ULEAD Clearinghouse.

Funding Disbursement

Grant awards and interval payments will be made as determined through an interagency agreement with the grantee's institution (a contract will be established for any private state institution partner). Institutions cannot charge overhead or indirect costs to administer the grant funds.

Application Deadline

Applications for the ULEAD priority research topics listed above are due on or before November 20, 2020.

Submission Information

Cover letter: Please provide the following information on a one-page proposal cover letter addressed to the ULEAD Director – principal investigator's contact information, name(s) of any co-principal investigator(s), amount of funding requested, anticipated project start date, estimated project end date, and a brief statement of how this project relates to any of your previous work.

Proposal: Prepare and attach to the cover letter a brief (7-page max.) narrative that includes:

- Background and rationale for the proposed study
- Conceptual framework and objectives of the research
- Description of the research design, methodology, and data analysis procedures to be used
- An explanation of the significance of the work
- Participant selection criteria
- Proposed research/work plan including dates for expending funds (separate 1-page calendar OK)
- Any additional proposed research publication outlet, grant submission, and/or research presentations planned from this work
- List of any Utah school/district sponsored research you have conducted within the last five years
- Abbreviated curriculum vitae (up to 5 pages; not a part of the above narrative)

Further Questions

Contact McKell Withers, Director, ULEAD Education (mckell.withers@schools.utah.gov or 801-557-4227) if you have questions regarding the application or submission process.

NOTE: All awards are contingent upon successful plan implementation and ULEAD receiving continued Utah State funding.

APPENDIX B

Teachers use evidence- and strengths-based instructional practices and foster supportive learning environments

Use evidence-based instructional practices¹:

- » Build upon students' knowledge, skills, and understandings
- » Support fluency with procedures on a foundation of conceptual understanding
- » Build upon experiences and knowledge of learners using all types of representations (e.g., numeric, symbolic, graphic, verbal, contextual and models: pictorial, visual, physical)
- » Pose purposeful questions and facilitate meaningful mathematical discourse

¹ National Council of Teachers of Mathematics. (2014). Principles to actions: Ensuring mathematical success for all. Reston, VA.

Foster a supportive learning environment:

- » Create social learning contexts for problem solving and mathematical explorations
- » Promote positive mathematical beliefs, productive struggle, and growth mindsets
- » Explore, appreciate, and honor cultural differences among learners
- » Create equitable opportunities for learning

Schools and districts provide high-quality and aligned curriculum, instruction and assessment

- » Provide focused, coherent, and rigorous math content that aligns to: Utah's Math Standards, Core Guides concepts and skills, Major Works, grade-level progressions and vertical articulations
- » Focus on high-quality, coherent Tier 1 tasks and sequences with rich contexts for problem solving
- » Provide formative assessments with opportunities for reflection and feedback based on strengths and areas for improvement

A Guiding Vision for K-12 Mathematics Instruction in Utah

Students develop...



Conceptual Understanding



Procedural Fluency



Strategic and Adaptive Mathematical Thinking



Productive Dispositions

Community partners support educators and families in math learning and leadership

- » Families engage with students around math at home
- » University research-practice partners provide professional learning and leadership supports
- » Community organizations collaborate to develop programs and experiences focused on math

USBE, Districts, and Schools support systems for data collection, monitoring, intervention, professional learning and community engagement

- » Conduct monitoring and intervention, within Multi-Tiered Systems of Support
- » Provide time and structures for job-embedded professional learning and collaboration
- » Build capacity for instructional leadership and coaching
- » Cultivate a supportive school culture, including parents and caregivers as partners in learning

Contributors: USBE Mathematics Specialists, Utah Leading through Effective, Actionable, and Dynamic (ULEAD) Education, Utah Education Policy Center at the University of Utah, the Center for the School of the Future at Utah State University, Regional Educational Laboratory West (April 2021)



Math Instruction

- » [Elementary Mathematics Endorsement](#)
- » [National Council of Teachers of Mathematics \(NCTM\) Effective Teaching Practices](#)
- » [Teaching Works High-Leverage Practices](#)
- » [Achieve the Core Instructional Practice Guide](#)
- » WWC Practice Guide: [Teaching Math to Young Children](#)
- » WWC Practice Guide: [Improving Mathematical Problem Solving in Grades 4 Through 8](#)
- » WWC Practice Guide: [Developing Effective Fractions Instruction for Kindergarten Through 8th Grade](#)
- » WWC Practice Guide: [Organizing Instruction and Study to Improve Student Learning](#)
- » WWC Practice Guide: [Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students](#)

Equity, Culturally Responsive Teaching, and Social-Emotional Learning

- » [Bringing a Culturally Responsive Lens to Math Class](#)
- » [SEL Competencies](#)
- » [Culturally Responsive Teaching: What You Need to Know](#)
- » [A Pathway to Equitable Math Instruction](#)

Family Engagement in Math

- » Toolkit: [Growth Mindset Kit for Parents](#)
- » Toolkit: [Building an Understanding of Family and Community Engagement](#)
- » Video: [Two Strategies to Help Your Child Learn to Love Math](#)
- » Article and resources: [Count on Families! Engaging Families in Math](#)

Standards and Curriculum

- » [Utah Core State Standards for Mathematics](#)
- » [Utah Core Guides](#)
- » [Utah Major Works](#)
- » [Utah Core Standards for Mathematics Curricular Resources](#)
- » [Utah's Recommended Instructional Materials System \(RIMS\): Searchable Database](#)
- » [EdReports](#)
- » [Achieve the Core Instructional Materials Evaluation Tool](#)

Assessment

- » [Utah Formative Assessment Tools](#)
- » [RISE benchmark modules](#)
- » [Grades 1-2 Mathematics Assessment Items](#)
- » [Achieve the Core Mathematics Assessments](#)
- » [Brilliant-Daily Problems](#)
- » [Desmos Classroom Activities](#)
- » [Achieve the Core Student Work Protocol](#)

Intervention

- » [Utah Multi-Tiered System of Supports](#)
- » [Mathematics Intervention Resources](#)
- » WWC Practice Guide: [Assisting Students Struggling with Mathematics: Intervention in the Elementary Grades](#)

Contributors: USBE Mathematics Specialists, Utah Leading through Effective, Actionable, and Dynamic (ULEAD) Education, Utah Education Policy Center at the University of Utah, the Center for the School of the Future at Utah State University, Regional Educational Laboratory West (April 2021)