

# How EIR Grants Serve High-need Students

January 2023



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## Introduction

The United States Department of Education's Education Innovation and Research (EIR) grant program makes serving high-need students a priority for all projects. Projects are often developed and designed to create equitable learning opportunities for high-need students from a variety of educational, community, social, and ability backgrounds. The projects are multifaceted, serving somewhat different populations and ages, but all projects serve high-need students, as defined by the grantee. The approach may include providing professional development, offering a new curriculum, involving community partners in schooling, or implementing a new technology.

Between 2017 and 2021, the EIR program made 134 awards to grantees. Each grantee defines high-need students in their own context. The definition of high-need can be made at the individual student level or more broadly, such as attending a school or district with a high percentage of high-need students. Grantees define their high-need students using a variety of characteristics or combinations of different statuses. In general, high-need students are at risk of failure or otherwise in need of special assistance and support. Often the definition of high need involves students from families with low incomes, students at under-resourced schools, students with disabilities, neurodiverse students, dual language learners, students from underrepresented minority communities, or students from non-white minority groups. High-need students can also be defined by academic performance, high absenteeism, and other behavioral indicators.

The most frequently used definition of high-need students included references to economic disadvantage (85 percent of grantees). This could be students living in poverty, students who receive free or reduced-price meals, students receiving Supplemental Nutrition Assistance Program benefits, or attending a Title 1 school. The second most commonly used category in defining high-need students is students with disabilities (45 percent of grantees).

This cross-project summary presents information on how five EIR grantees have worked to innovate, implement, and scale programs while serving high-need students. It discusses their challenges and strategies used for working with students. Special attention is given to lessons learned during the COVID-19 pandemic and unintended positive takeaways that grantees will continue to implement as programs recover and thrive in a post-pandemic context. Information on the experiences and outcomes of each project was collected through individual interviews with grantees, written feedback from grantees to specific questions about their projects, and a panel discussion with grantees.

## Case Studies

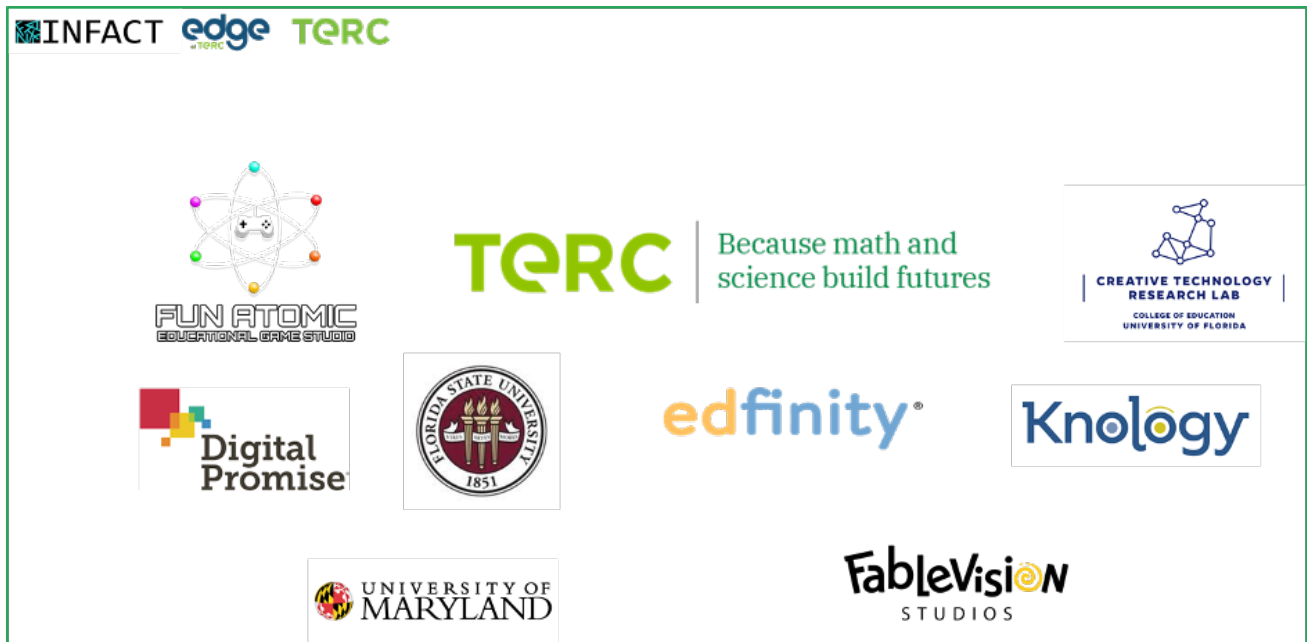
These five case studies provide descriptions of each project, successes, lessons learned, and implications for future implementations of the project. Although each of these projects focused on a specific group of high-need learners, readers should consider the opportunities that exist to implement these ideas with other groups of high-need learners or serve a similar student population with a different type of innovation.

## INFACT: The Inclusion of Neurodiversity in Foundations and Applications of Computational Thinking (INFACT)

### High-need student profile

INFACT targets the high needs for neurodiverse learners in STEM. For INFACT, students with Individualized Education Programs, students with 504 plans, or those identified by teachers as neurodiverse and struggling academically.

This project is a collaboration between the Educational Gaming Environments (EdGE) Group at TERC, along with multiple community and university partners including Digital Promise, Florida State University, FunAtomic, Looking Glass Ventures/Edfinity, University of Florida, University of Maryland, Knology, and Fable Vision.




The team developed and implemented an inclusive program to help students in grades 3 to 8 increase their Computational Thinking (CT) and Executive Functioning (EF) skills. The program uses the INFACT portal (see example on the following page) to provide teaching and learning materials combined with games to students through the introduction of foundational CT practices, robotics, and beginning coding activities.

## Example of INFACT portal lesson

Total Estimated Time: ~ 75 minutes

### Activation



Get learners excited to begin a series of activities related to **IF-THEN** conditional statements by playing a game in which players must obey the leader's instructions IF stated conditions are true. (~ 10 minutes; Offline; Group/Class)


**RECOMMENDED**

- [CL\\_1\\_What IF Game.pdf](#)
  - Optional: [Conditional Logic Word Cards](#) (See [Overview and Support Materials: Word Cards](#).)

#### What IF Game

Time Estimate:  
~ 15 minutes

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Get learners excited to begin a series of activities related to **IF-THEN** conditional statements by creating their own unique Zoombini based on a series of **IF-THEN** conditionals. (15-25 minutes; Offline OR Online; Individual)

- [CL\\_1\\_Make Your Own Zoombini.pdf](#)
  - [CL\\_1\\_Make Your Own Zoombini\\_Activity Sheet](#) (PDF; Google Slides)
  - Optional: [CL\\_1\\_Make Your Own Zoombini\\_Zoombini Photo Gallery.pdf](#) (from the **Clear Commands** sequence)
  - Optional: [Conditional Logic Word Cards](#) (See [Overview and Support Materials: Word Cards](#).)

#### Make Your Own Zoombini

Time Estimate:  
~ 15 minutes

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### Foundational

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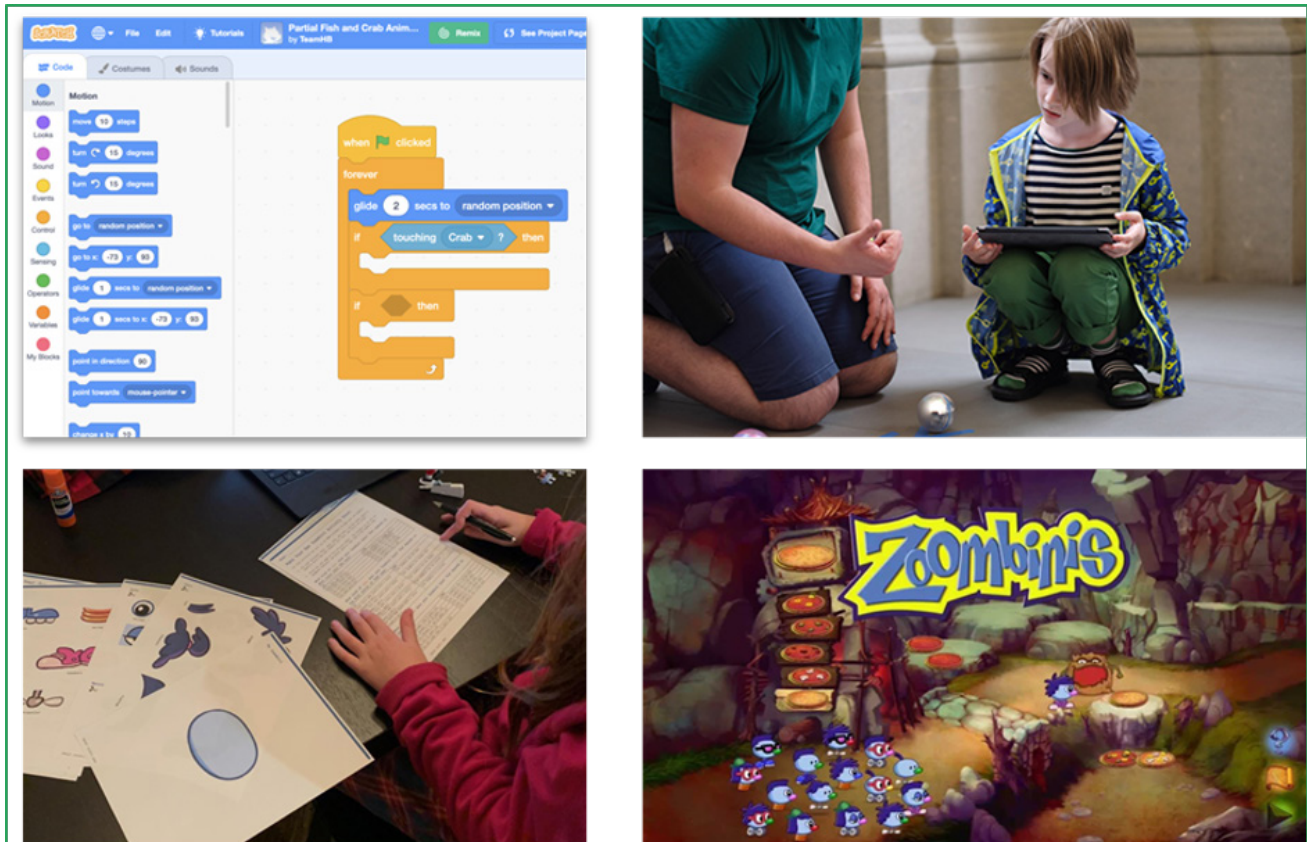
### Applied

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### Wrap-Up

Utilizing real-life examples to facilitate the learning process, the team developed lessons, learning activities, and games that focus on computing structures such as conditionals, loops, variables, functions, problem decomposition, pattern recognition, abstraction, and algorithm design. The design of the program supports a variety of learning styles with accommodations for attention, metacognition, and social-emotional learning while using programming similar to adaptive testing to formulate customizable supports and pacing for students based on the strengths and areas of weakness of each individual learner. Teachers may also filter by grade level, theme, stage of learning (Activation, Foundational, Applied, & Wrap-Up), and/or additional scaffolding options to support student engagement based on individual student learning styles.

## Example of INFACT activities



INFACT was intentional in the inclusive design of the learning material and the options to differentiate the lessons to support a variety of learners. Although consideration was given to planning for neurodiverse learners, these materials were not designed with a particular student demographic group in mind. The team also recognized the impact of trauma on students' capacity to engage in the learning process and created materials with the understanding that students have a variety of needs, strengths, and interests that contribute to their individual learning. In addition, the team acknowledged that students from marginalized or underrepresented groups have strengths that are aligned to CT; however, many students in these groups have not been given the option to meaningfully engage in the instructional environment and effectively demonstrate this skill set.

The team has designed the program to allow for multiple entry points for students based on individual factors for each student. By adapting to individual student learning styles, needs, and capacity, while providing cognitive and social-emotional support, INFACT endeavors to take advantage of the opportunity to increase the capacity of students to become competitive and valuable members of the STEM workforce.

The overall implications of the project were positive with specific feedback from teachers indicating they found the format of the lessons and planning process to be easily accessible for both teachers and students; however, the team is considering ways to make the process even more efficient for teachers. Teachers liked the ability to customize student learning plans based on student ability and

learning style. Teachers also found the practice of using real-life examples to be an excellent means of creating relevant and engaging learning experiences for students. One of the biggest challenges for this project was finding willing teacher participants due to the project starting at the onset of the COVID-19 global pandemic.

## Future Forward

### High-need student profile

Rather than targeting students, Future Forward serves schools and communities with a high percentage of students participating in the National Student Lunch Program; low test scores or large subgroup achievement gaps; and locale type (urban and rural).

[Future Forward](#) delivered a literacy intervention project that offered research-based individualized tutoring and family engagement for students in kindergarten through grade 3 who attended school in an urban community. During the initial phases of the project (prior to COVID-19) the team offered all services in-person. The initial project began with fifteen schools across three states in the Fall of 2019. By the Fall of 2020, only thirteen schools remained a part of the study and of the 13 remaining schools, 12 were in remote learning.



The goal of the project was to ensure proficiency in reading for early or emergent readers. The structure of the program consisted of 90 minutes of 1:1 tutoring per week for students who scored in the 25th to 40th Percentile in reading proficiency. The tutoring sessions were held during the school day based on the "Science of Reading" with scripted reading lessons and intense support for parents and caregivers from Family Engagement Coordinators who helped families and caregivers recognize things they were already doing that promoted literacy and language acquisition in children. Program tutors used a variety of reading programs including Fountas & Pinnell, Reading A to Z, and Words Their Way. The determination of which program to utilize was determined by student needs from local school assessments such as Renaissance Learning, STAR, or Words Their Way.

Tutoring positions were part-time positions and tutors often worked through a third-party organization such as the Boys and Girls Club. Although not all tutors were certified teachers, they were all trained and supervised by "Instructional Coordinators" who typically held the credentials of a certified teacher. The support was supplemental to the reading instruction students received in the classroom and typically occurred during independent reading time or center time.

The results of the project have shown that year over year there has been a positive impact on student learning for program participants and a longitudinal study showed positive outcomes for students related to literacy for five years after they completed the program. Much of the success of the program has also been credited to the inclusion of the Family Engagement component. The project had the most significant impact on African American boys and another surprising result was that as a result of participating in the program students who completed the program were less likely to be determined eligible for special education.

## Future Forward research findings

- Compared to students who continued practices as usual rather than implementing Future Forward, students in Future Forward were **6 times** more likely to reach grade-level benchmarks AND had a 27 percent reduction in chronic absenteeism
- A five-year longitudinal study found lasting effects on reading where students remained 6 months ahead of their business as usual peers, and students were less likely to be placed into special education
- Meets the “strong evidence definitions” in ESSA and had statistically significant positive effects when reviewed by the What Works Clearinghouse

Challenges encountered by the team included tutors having the capacity and time to build strong relationships with students. Future projects will eliminate the third-party employment process and hire tutors directly through the school. There did not seem to be any correlation between the background of the tutor and the background of the student in the level of proficiency in reading achieved by the student.

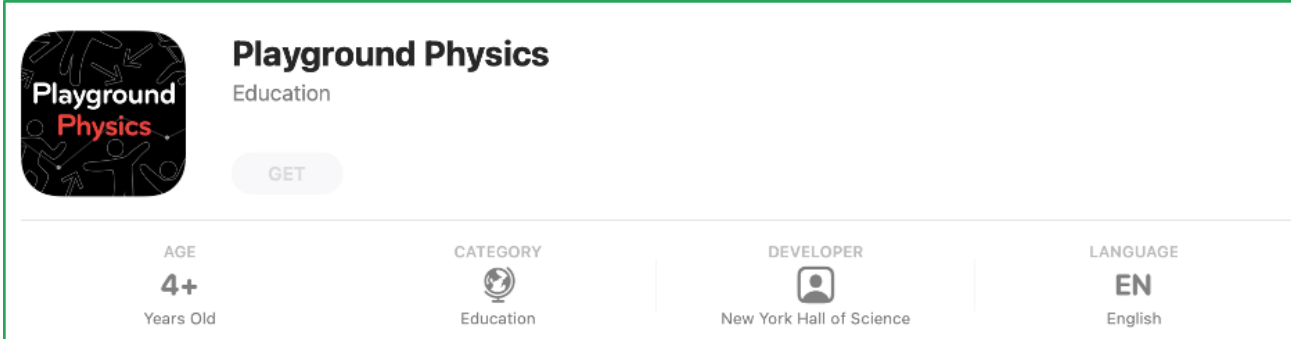
Future projects will focus on students from rural communities who also are living in poverty. This demographic group was not the original focus of the project; however, the team observed challenges serving this group of students during the COVID-19 pandemic.

## Playground Physics

### High-need student profile



Playground Physics targets students who are eligible for free or reduced-cost lunch and are from groups traditionally underrepresented in STEM careers.

Playground Physics created an app for teachers to share with middle school students to increase student engagement with physics as a result of participating in playground activities using electronic tablets. Participating teachers provided their middle school students access to an app that allowed them to video record their activity and then once the activity was recorded the app would share with the student the scientific steps behind the activities they performed. The Playground Physics program sought to make science meaningful, accessible, and exciting for ALL learners.



**Playground Physics**  
Education

GET

AGE <b>4+</b> Years Old	CATEGORY  Education	DEVELOPER  New York Hall of Science	LANGUAGE <b>EN</b> English
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The team developed three units of study aligned to New York State Standards and the Next Generation Science Standards (NGSS) centered on force, energy, and motion. Students were able to engage in the learning process through the implementation of a six-week supplemental curriculum based on activities such as throwing a ball or swinging on a swing, and then analyze the activities for force, motion, and energy. One of the main goals of the project team was to seize the opportunity to provide high needs students, who may not have been sufficiently prepared through traditional academic structures, with more exposure to STEM related careers.

The project began with 64 teachers and, due to COVID-19, concluded with only 15 of the original participants. The project team provided classroom sets of electronic tablet devices and training to the teachers on how to share the app with students, allowing them to implement the use of the app in their learning environments. All teachers were supported through a coaching and Train the Trainer model with access to an online Community of Practice (COP) through Schoology. Teachers liked the Train the Trainer model and the coaching/mentorship component of the program. The project also allowed for flexibility and adaptiveness in the learning process, which was appreciated by participants. Teachers had to quickly adjust implementation plans at the onset of the pandemic and ensure that there was adequate support for students. The project team also had to ensure they were providing teachers with the assistance needed to implement the project in a revised way.

As a result of participation in the program, the students demonstrated increased knowledge of physics; however, there is not yet long-term evidence on whether student participation in the program increases their interest in STEM careers or improves student academic achievement in math or science. The team also found the technology platform selected limited teacher and student participation, as the playground videos could only be uploaded through the app on a tablet because the original project did not allow for use of a cell phone or web-based browser platform. In addition, variation in technology infrastructure from school to school presented a challenge in ensuring that all schools could access and utilize the app.

The next steps for the project include increasing the scope to include districts from across the entire state of New York, in a variety of settings including rural and suburban communities. This expansion will also allow the team to better understand the technology landscape in rural communities. The goal is to create an application that can be effectively utilized on any device from any type of setting—from outside to a basketball court, to a state park, or a football field. The team has developed a partnership with an organization that will allow them to have the platform work on any device.

## Peer Group Connection: Improving Educational Outcomes in High-Need, Low-Income Rural and Urban Communities through a Middle School Transition and Cross-Age Peer Mentoring Model

### High-need student profile

Peer Group Connection–Middle Schools (PGC-MS) and Peer Group Connection–High Schools (PGC-HS) serve urban and rural districts where subgroups of students are at disproportionate risk for poor academic outcomes, including exclusionary and discipline practices.

The Center for Supportive Schools offered two peer mentoring programs designed as a course for credit to support students from families with low incomes. The first phase of the project Peer Group Connection – High School (PGC-HS) provided peer-to-peer mentoring with 11th and 12th grade students serving as peer mentors to entering 9th grade students to create a school environment that was welcoming and affirming for incoming 9th grade students. The second phase of the project expanded the scope of peer-to-peer mentoring to include 8th grade students serving as peer mentors for incoming 6th grade students to assist with the transition from elementary to middle school with a concentration on Identity, Community, and Leadership.

The initial design of both programs was done in collaboration with key stakeholders including community members, parents, and students. The group determined that it would be critical to student success to have a planning year and begin the program at the start of the academic school year in the fall. Students had to apply to be a mentor; mentors and mentees were paired based on self-preference and adult selection. Teacher mentors were provided training on how to select students for participation in the program and there was consideration to make sure that mentors were representative of the diversity of the student mentee participants. Both programs included daily leadership development sessions, a parental involvement component, and periodic outreach sessions where students engaged in simulations that allowed them to practice skills such as social engagement, critical thinking, goal setting, decision-making, time management, teamwork, and communication.

The high school students participated in a community service project and “booster” activities to support students in 10th grade. Middle School students planned a welcome for the next set of incoming 6th grade students. These activities allowed students to reflect on components of the program they believed were helpful and provide recommendations for how to improve the program for future participants.

Initial findings suggest positive outcomes with both 6th grade and 9th grade students who participated in 14 or more sessions. Specific results include increased engagement in the learning process with improvements in students’ academic, social, and emotional skills leading to students earning higher grade point averages, decreased dropout rates, decreased disciplinary infractions, and fewer suspensions for students who participated in the project compared with those students who did not participate in the mentoring program.

### Students who were randomly assigned to PGC-HS, compared to students randomly assigned to the control group demonstrated:



Fewer suspension incidents  
Fewer disciplinary referrals



Greater school engagement  
Increased educational expectations

*Jenner, E., Lass, K., Walsh, S., Demby, H., Leger, R., Falk, G. (in press) Effects of Cross-Age Peer Mentoring Program Within a Randomized Controlled Trial. Journal of Research on Educational Effectiveness.*

The strength of the program was in strong stakeholder support, the planning process, and the collaborative nature of the planning process. In addition, the schools that were able to implement with the highest level of fidelity experienced increased positive student outcomes. The next phase of the program is providing 1:1 mentoring support between students and a trusted adult. There is also room to explore the impact of the program on the mentees.

### Summer Academy for Integrated Language Learning (SAILL), Youth Educational and Emotional Supports

#### High-need student profile

SAILL serves newcomer English Learners in grades 8 through 12 who entered the U.S. school system within the last 3 years.

The Summer Academy for Integrated Language Learning (SAILL) program is a five-week summer program that provides high school students the opportunity to earn credits toward high school graduation while enhancing their English language skills and also providing them with socio-emotional support. Students entering grades 9 through 12 who have entered the United States within the last five years and have scored at the emerging or expanding level on the English Language Proficiency Assessment of California (ELPAC) are eligible to participate in the program.



The goal of the SAILL program is to increase student English Language proficiency, reading skills, and writing competencies grounded on five core principles at the foundation of the program:

1. Collaboration through meaningful student-to-student interaction,
2. Strategic language and content integration,
3. Curriculum that is grounded in real-world application of learning,
4. Supporting the whole child with wellness support and counseling, and
5. Educators strengthen and practice their instructional leadership skills through regular opportunities for collaboration within a distributed leadership framework.

SALL creatively utilizes the summer semester by implementing a project-based approach built on evidence-based instructional strategies infused with computer science and algebraic thinking that combines English language instruction with rigorous core content instruction and socio-emotional support. The program design helps students improve both English language skills and core academic skills. The use of teaching visuals, graphic organizers, explicit teaching, and structured small group activities ensure that students are increasing their English language skills and learning new academic content.

The program is unique because every teacher has dual responsibilities for both language instruction and core content instruction. SALL incorporates a distributed leadership and coaching model that offers participating teachers professional development opportunities before the program begins and throughout the summer. The design of the adult collaboration, coaching, and distributed leadership is based on the International Network of Public Schools (INPS) model. All SALL teachers engage in 49 hours of learning prior to the start of the program and algebra teachers have an additional 21 hours of professional learning. The philosophy for teachers is the same as it is for students with an emphasis on the importance of working in diverse and collaborative groups to solve problems. SALL teachers report implementing these same instructional strategies in their courses during the regular academic year.

Students who participated in the program were more inclined to take additional math, English Language Arts, and Sciences classes during the regular academic year, which can lead to increased graduation rates. In addition, students reported increased confidence in their learning capabilities and more certainty in communicating with peers in English. The daily peer interactions as a component of the program have helped students to extend learning beyond the official instructional lesson presented by the teacher.

## Common Themes

Each of these projects incorporated real-life situations into the learning process and each of the grantees capitalized on the importance of making learning relevant to the students. Grantees found that students who could relate to the lessons were more likely to engage in the learning process and experience positive outcomes. Project-based and experiential learning continue to provide excellent opportunities for learners from all backgrounds and varying abilities to successfully engage in the learning process and explore careers.

Prior to COVID-19 there was a teacher shortage in the United States and the increased pressures and demands of the pandemic have exacerbated the need for highly skilled teachers who are also able to connect with students on a social and emotional level. However, even though staffing was a challenge for many grantees, providing support, coaching, or professional development components for teachers and staff improved program implementation. In addition to the students being served directly through programs, programs that support teachers can also reach students through helping increase teachers' capacity to support high-need students.

Finally, projects that involved the use of technology as an instrument for student engagement found that limited access to a variety of technology platforms and internet access continues to be a challenge for many students in high needs categories. Grantees were reminded that the "tech divide" is still a challenge post-pandemic and sought ways to eliminate this challenge. Collaborations with

partner agencies to develop platforms, programs, and apps that could be used on almost any device, including a cell phone, was one consideration. Partners can also help to serve as thought partners to adapt innovations to student need. In addition, grantees acknowledged the limited findings from their projects related to technology and internet access for students in rural communities and are considering opportunities to further engage with students in rural communities for future grant cycles.

## Considerations for Practitioners and School Leaders

The U.S. Department of Education recognizes a need for equity in education and equity in innovation ([2022 equity action plan](#)). Through its actions, the Department aims to support educators to meet students' holistic needs, ranging from their academic growth to their social and emotional development, and their mental health. There is a focus on creating pathways to careers and equalizing college access. Furthermore, the Department is investing in building knowledge and evidence around practices that improve outcomes for all students, including neurodiverse students, students from underrepresented minority communities, dual language learners, students with disabilities, and underserved students. The Equity Action Plan is aligned with calls for an education agenda centered on equity and built with considerations for how policies affect historically underserved and under-resourced communities (Sargrad et al 2019). Innovation is an essential element to acting on these plans; replicating the same practices in the same ways will not drive the drastically different results that are needed to achieve such equity.

Understanding the diverse needs of all students is a first step. All students need the opportunities to benefit from new innovations with equity as the goal. Beyond merely accessing opportunities and innovations, the next step is understanding if a program works for different students. Whether or not a program is effective in achieving its intended outcomes may vary across different populations. What works for some students might not show success in the same way as it does for high-needs students; exploring creative ways to adapt and evolve innovation for all students is essential.

However, creating opportunities for all students, especially high-need students, requires training and preparation of educators. Many EIR projects incorporate training and professional development as part of their projects. Often this includes taking an equity lens and ensuring educators use inclusive, collaborative approaches that value culture, consider context, and uphold high expectations for all students. Programs can use resources such as the Region X Equity Assistance Center's [Guide to Evidence-Based Practices for Teaching All Students Equitably](#) (Krasnoff 2016) or Chiefs for Change guidance on [Honoring Origins and Helping Students Succeed](#) (Chiefs for Change 2019).

This cross-project summary highlights how grantees take an asset-based approach that leverages the unique strengths of students and communities as they engage in innovative projects. Similarly, teaching all students equitably through culturally responsive practices that allow learners to construct knowledge using their strengths. As educators implement innovative programs, maximizing opportunities to leverage a wide array of diverse skills can activate an unlimited potential for both student and program success.

School leaders will need to be creative in developing mentoring, coaching, and communities of practice for educators that help them to avoid burnout and simultaneously inspire them to continue facilitating positive learning experiences for students. The EIR projects have shown that flexibility

in design is needed. A single “one size fits all” approach does not exist. Instead, personalization of programs and customization to contexts with appropriate adaptation can lead to desired outcomes. Personalization and customization can be part of a structured intervention, with flexibility being a key component.

The intentional focus of these EIR projects on students with the most need, as opposed to high achieving students, provides an opportunity to move the needle in student outcomes as well as our understanding of what works in educational settings for all students. The rigorous evaluations and attention to fidelity of implementation help to build our understanding of the science of learning. The building of knowledge of what works, for whom, and under what conditions is necessary for improving equity in education.

Innovative projects have powerful potential to serve a broad range of high-need students including those discussed in this brief as well as students experiencing homelessness, migrant students, immigrant students, Native American students, students in foster care, students impacted by the justice system, disconnected youth, LGBTQI+ students, and others as identified by local needs.

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