RETHINKING RESPONSIVE EDUCATION VENTURES: YEAR 1 REPORT

Prepared by ICF for the Maine Department of Education

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Table of Contents

Cover page caption: *Students and educators from Adopter School Katahdin explore the outdoors on a trail walk as part of their innovative project model.*

Executive Summary

Background

In June 2020, the Maine Department of Education (MDOE) was awarded a $16.9 million grant from the U.S. Department of Education's Rethink K–12 Education Models program to implement the Rethinking Responsive Education Ventures (RREV) program. The overarching purpose of RREV is to promote innovation in Maine schools so that all students across the state have access to high quality and responsive learning opportunities. RREV supports:

- The **creation** of innovative education models through the Innovative Mindset Pilot Development (IMPD) courses, during which Maine educators use principles of design thinking to develop a pilot plan for an innovative education model that is responsive to their local needs.
- The **implementation** of innovative education models through awards made to Adopter Schools to implement a pilot plan developed during an IMPD course. RREV funding may be used for expenses such as construction of infrastructure, purchase of materials or services, or staff salaries and benefits. In addition to financial resources, RREV also supports implementation of pilot models by offering Adopter Schools access to a RREV coach, who is an individual with expertise aligned with the innovative model (e.g., outdoor education).
- The **dissemination** of innovative education models through an online community of practice called EnGiNE where educators can share pilot plans, resources such as curricula or class activities, and ideas with one another.

In July 2021, MDOE engaged ICF, a national research firm, to conduct an external evaluation of RREV. The overarching goals of ICF's evaluation is to document lessons learned from MDOE's experience creating, implementing, and disseminating innovative educational models and to assess the extent to which RREV has changed the educational environment in Maine. ICF carried out a range of evaluative activities, including surveys of IMPD participants, educators at Adopter Schools, students at Adopter Schools, and families of students at Adopter Schools. ICF also visited all nine Adopter Schools and conducted focus groups and interviews with educators, parents, students, and community partners involved in innovative education models.

Key findings

Creation of innovative education models through IMPD courses

- **Most educators found IMPD courses valuable, informative, and relevant**. Overall, 86 percent of IMPD participants "agreed" or "strongly agreed" that the course they took was a good use of their time and that the content of the course was relevant to their work. Almost all (93 percent) of IMPD post-survey respondents felt "very prepared" or "moderately prepared" to implement innovative education principles after taking the IMPD course.
- **IMPD participants said the course prompted deep thinking about the nature of innovation and contributed to more nuanced understanding of responsive education.** Interview and focus group participants credited the IMPD course with enriching their understanding of innovation, while also offering practical tips, tools, and

strategies for introducing innovative programming to their local contexts. Many participants appreciated how the IMPD course allowed them time and space to explore new ideas and get constructive feedback from fellow educators across the state.

Implementation of innovative education models at adopter schools

- **The innovative educational models supported by RREV funding include a diverse array of components and strategies.** Each Adopter School implemented a unique pilot model aligned with their school's needs and priorities, but several elements appeared at multiple schools, including project-based learning, community partnerships, outdoor education, student-directed learning, online learning, and career and technical education.
- **Pilot models cultivate student agency and offer students opportunities to draw connections between core content and out-of-classroom experiences**. All pilot models offered students learning opportunities outside a traditional classroom. These opportunities often involved intentional efforts to empower students with more choices about *what* and *how* they learn, paired with guidance for reflecting on connections between their new experiences and traditional academic subjects. In so doing, many pilots sought to address the whole student, including their academic, mental, social, emotional, cognitive, and physical needs.
- **Implementing an innovative educational model fostered a sense of common purpose at Adopter Schools and helped deepen connections between schools and their communities.** Stakeholders frequently characterized their pilot as a unifying force, which they felt promoted greater motivation among students and teachers at their school. Many stakeholders also characterized their program as an opportunity for students to explore their surroundings and develop greater appreciation for their community and its culture.
- **Almost all students who directly participated in a RREV-supported innovative educational model demonstrated academic growth during the first year of implementation.** Overall, 91 percent of students directly involved in a RREV-supported innovative pilot demonstrated academic growth on their school's specified measure.
- **Most students and parents were satisfied with the pilot program at their school and perceived benefits from its implementation.** Overall, 86 percent of students said they were glad they participated in their school's pilot, 82 percent said they liked their experience in the pilot program, and 74 percent said the pilot helped them learn. For parents of these students, 93 percent were satisfied with their child's experience and 99 percent said they would recommend the program to other parents. Almost all parents also "somewhat agreed" or "strongly agreed" their child enjoyed participating in the pilot program (93 percent) and learned a lot from doing so (92 percent), while 84 percent were satisfied with the availability of responsive education opportunities offered through their child's school.
- **Adopter Schools experienced challenges recruiting staff to implement specialized programs, procuring materials and equipment, and obtaining buy-in from all staff and school leadership, especially those not directly involved in pilot development**. Many stakeholders attributed their challenges to the COVID-19 pandemic, especially its effects on the labor market, supply chain, and the demands placed on educators.

Educator attitudes toward innovation in education

- **Educators directly involved in a pilot model exhibited high openness to new approaches to education**. On an educator survey, more than three-quarters (77 percent) of educators agreed now was a good time to experiment with new approaches to education. During interviews and focus groups, teachers credited RREV with bringing "excitement" and "courage" to teachers who try new things in their schools.
- **Educators appreciated the opportunity to collaborate on a shared mission.** Almost all educators (98 percent) reported times when they learned something from a colleague that led them to try something new in their teaching. During interviews and focus groups, several teachers said that RREV increased their confidence in the idea that public education can be exciting, innovative, and collaborative.
- **Educators had mixed perceptions of their school leaders' support for innovation.** Although almost all educators (90 percent) agreed that their school's leadership *encourages* teachers to try new things, only a minority of teachers (44 percent) agreed that their school leaders *reward* teachers who try new things.
- **Most educators were satisfied with the support they received to implement their pilot model, but there was a sizable minority who did not believe they were well enough supported.** A majority (65 percent) of educators who were directly involved in implementing an innovative educational model agreed that they had the necessary resources and training to successfully implement their pilot, but about a third (35 percent) did not feel like they had adequate support. Several educators said that they needed more time among other day-to-day responsibilities for planning and implementation of the pilot at their schools. Other teachers suggested more subject-specific training and examples of activities they could use with students, especially related to outdoor education. A few teachers also commented on leadership turnover in their district, which they felt diminished the amount of support they received.

Introduction

Background and theory of change

In June 2020, the Maine Department of Education (MDOE) was awarded a $16.9 million grant from the U.S. Department of Education's Rethink K–12 Education Models program to implement the Rethinking Responsive Education Ventures (RREV) program. RREV emerged from the ingenuity and commitment shown by Maine educators during the COVID-19 pandemic. When the pandemic shut down in-person learning, Maine educators responded to student needs by devising new strategies for teaching and learning outside the traditional four-walled classroom.

As schools return to in-person learning, RREV seeks to maintain and channel the innovative spirit exhibited during the pandemic by supporting the creation, implementation, and dissemination of innovative education models. Ultimately, RREV seeks to promote systemic change in Maine schools, such that innovative education models are continuously developed and refined in response to emerging student needs so that all students across the state have access to high quality and responsive learning opportunities. Exhibit 1 provides a visual logic model of RREV's theory of change.

EXHIBIT 1. RREV LOGIC MODEL

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
Maine educators' ideas and experience Maine's natural resources and environment $16.9M grant from the U.S. Department of Education Rethinking K–12 Education Models program Institutional support from the Maine Department of Education	Implement Innovative Mindset Pilot Development (IMPD) to help educators strengthen knowledge of design thinking and create innovative and responsive education models Provide $250,000 awards to school administrative units (SAUs) to implement innovative and responsive education models. Offer awardees services of a RREV coach to support pilot implementation Host the EnGiNE online community of practice where educators post pilot plans and resources	# of IMPD courses # of educators who complete an IMPD course # of innovative education models created # of SAUs that receive RREV awards # of RREV coaches hired # of teachers involved in an innovative education model # of students served by an innovative education model # of pilot plans posted on EnGiNE # of educators who are active on EnGiNE	Improved educator knowledge of design thinking Improved educator attitudes toward innovation Increased SAU support for innovative ideas and programs for education Increased parent satisfaction with availability of responsive education models Increased student access to innovative and responsive education models	Maine educators integrate design thinking and innovation in their regular practice Maine schools systematically support and reward innovative and responsive educators Increased parent satisfaction with their children's education Improved student academic achievement and engagement	There is a culture of innovation in Maine schools where responsive education models are continuously developed, refined, and disseminated All students across Maine have access to high quality and responsive learning opportunities

Program description

RREV supports the *creation* of innovative education models through the **Innovative Mindset Pilot Development (IMPD)** courses, which are offered at no cost to educators through Maine Institutes of Higher Education. During an IMPD course, educators learn how to apply design thinking concepts to address needs and seize opportunities at their school. Throughout the IMPD course, participants conceptualize and refine an innovative educational model that is responsive to their local context. Ultimately, IMPD participants create a detailed pilot plan that outlines the activities and expected outcomes of their innovative education model.

RREV supports the *implementation* of innovative education models through awards made to **Adopter Schools**. A RREV award provides up to $250,000 to a school administrative unit (SAU) to pilot an innovative education model that was developed during an IMPD course. To be eligible for a RREV award, at least one teacher and one administrator from an SAU must have completed an IMPD course and developed a full pilot plan. At least 67 percent of RREV funding must be applied toward direct instruction, and may be used for expenses such as construction of infrastructure, purchase of materials or services, or staff salaries and benefits. In addition to financial resources, RREV also supports implementation of pilot models by offering Adopter Schools access to a RREV coach, who is an individual with expertise aligned with the innovative model (e.g., outdoor education). A RREV coach meets with educators at the Adopter School to discuss opportunities and help solve challenges as they implement their pilot plan.

RREV supports the *dissemination* of innovative education models through an online community of practice called **EnGiNE**. Pilot plans and other resources—such as curricula, class activities, and assessments—are posted on EnGiNE by educators, administrators, RREV coaches, and MDOE staff. EnGiNE also provides a place for educators throughout the state to discuss their ideas and experiences with innovative education. The resources and discussions hosted on EnGiNE will persist even after RREV grant funding has been spent and thus may serve as an ongoing resource supporting a culture of innovation in Maine schools.

Evaluation goals and questions

In July 2021, MDOE engaged ICF, a national research firm, to conduct an external evaluation of RREV. The overarching goal of ICF's evaluation is to document lessons learned from MDOE's experience creating, implementing, and disseminating innovative educational models and assess the extent to which RREV has changed the educational environment in Maine. This report is divided into three chapters, each of which describes our evaluation methods and findings for a specific topic.

Chapter 1 is focused on the **creation** of innovative education models through IMPD courses, and addresses the following research questions:

1. How were IMPD courses implemented during the 2021–2022 school year?
2. What worked well about IMPD implementation during 2021–2022?
3. What challenges did instructors and participants experience during 2021–2022 and what advice did they offer to improve the program?

Chapter 2 is focused on the **implementation** of innovative education pilots at the nine Adopter Schools that received RREV awards during the 2021–2022 school year, and addresses the following research questions:

1. What educational models have Adopter Schools implemented during the 2021–2022 school year?
2. In what ways are these education models innovative and responsive?
3. What challenges have Adopter Schools encountered while implementing their pilots this year?
4. What successes have Adopter Schools experienced this year?
5. How have these education models changed student academic and non-academic outcomes and the educational culture at Adopter Schools?
6. To what extent were students and families satisfied with the responsive education opportunities offered through RREV?
7. What lessons can be learned that would be helpful to future schools adopting innovative models?

Chapter 3 is focused on **attitudes toward innovation** among educators at Adopter Schools and their satisfaction with the support they received to implement their educational models. This chapter addresses the following research questions:

1. What attitudes do educators at Adopter Schools have toward innovation in education, and to what extent and how did these attitudes change during implementation of an innovative education model?
2. To what extent were educators satisfied with the professional development and other resources offered to support the implementation of their pilot model?

In addition to the statewide findings described in these chapters, Appendix A provides detailed case studies about all nine Adopter Schools funded during the 2021–2022 school year. These case studies summarize the context in which innovative education models were developed and describe their implementation progress, outcomes, future plans, and lessons learned from the first year.

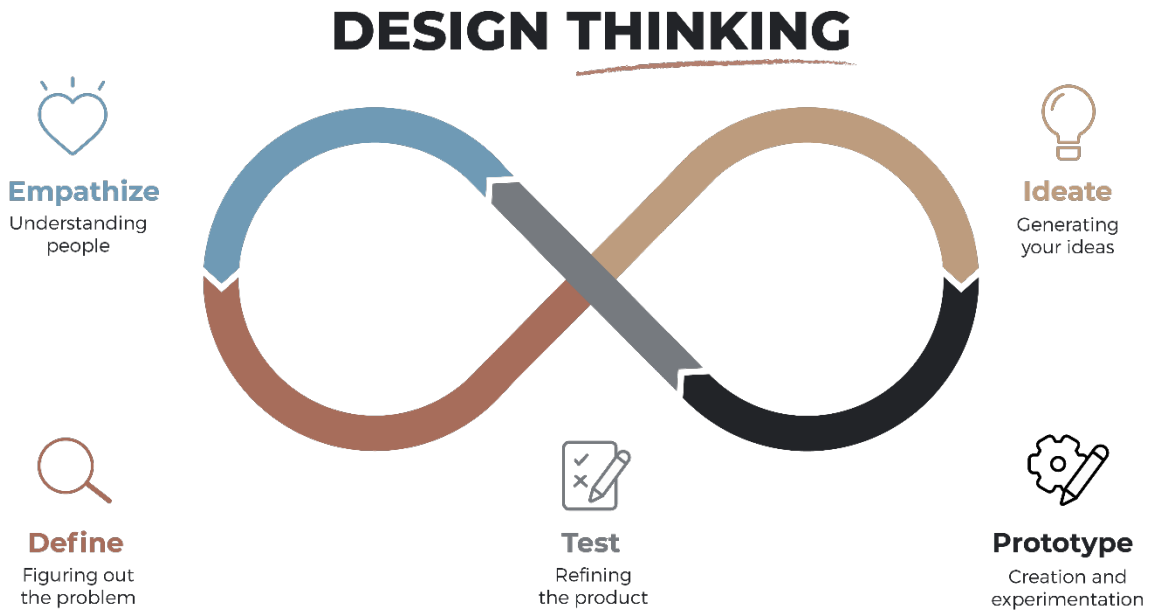
This report covers 1 year of an ongoing program and therefore presents findings at an interim stage. ICF will submit a final report at the conclusion of the RREV grant that provides a full, retrospective evaluation of RREV's implementation and impact.

Chapter 1: The Creation of Innovative Education Models through IMPD Courses

Background

Maine's RREV initiative is intended to support a culture of innovation in Maine schools. A key component of RREV is the Innovative Mindset Pilot Development (IMPD) course, which is offered at several Maine Institutes of Higher Education at no cost to educators. The purpose of the IMPD course is to introduce educators to design thinking, which is a problem-solving approach that involves the iterative creation, testing, and improvement of ideas and products (Exhibit 2). Design thinking is integral to RREV's model because it promises to yield continuous innovation and productive experimentation in response to evolving challenges and opportunities across Maine schools.

EXHIBIT 2. THE DESIGN THINKING PROCESS[1]



During an IMPD course, participants apply design thinking concepts to the development of an innovative education model. By the end of the course, participants have created a pilot plan that outlines the activities and expected outcomes of their innovative education model. Schools where two or more educators—one of whom must be an administrator—complete an IMPD course are eligible to apply for RREV funding to implement a pilot plan developed during the course. RREV requires the participation of at least one administrator because the innovations are intended to produce systemic change and therefore buy-in and engagement from school leadership are essential for success.

[1] Image source: https://www.mage.com/insight/the-design-thinking-process-how-does-it-work/

Research questions

This chapter focuses on the seven IMPD courses that occurred during the 2021–2022 school year.[2] Specifically, this chapter addresses the following research questions:

1. How were IMPD courses implemented during the 2021–2022 school year?
2. What worked well about IMPD implementation during 2021–2022?
3. What challenges did instructors and participants experience during 2021–2022 and what advice did they offer to improve the program?

Methods

To gather feedback on the IMPD course, ICF administered a pre- and post-survey to all 75 educators who completed an IMPD course between September 2021 and May 2022.[3] All participants received two reminders to complete each survey before data collection was closed; the response rate for the pre-survey was 73 percent (55 responses) and the response rate for the post-survey was 45 percent (34 responses). ICF included all survey responses in our analysis of post-only questions and open-ended questions, while only matched pairs (n=23) were included in our analysis of changes between pre- and post-surveys. Appendix A provides the descriptive statistics on the pre- and post-surveys.

ICF also conducted interviews with five instructors who taught or co-taught an IMPD course, as well as 15 participants who completed the course. A two-person research team coded all interviews for themes aligned with the research questions.

Participants' backgrounds

IMPD course participants held a range of positions in their school districts. Although the most common role of IMPD participants was teacher, participants also included people serving as superintendents, principals, counselors, curriculum directors, specialists, and other school support staff.

IMPD course participants also came with varying levels of experience. A plurality (39 percent) of participants had under 3 years of experience in their current role, while 20 percent had been in their role between 3 and 9 years, and 28 percent had more than 8 years' experience in their role.

Participants' motivation to attend

During the interviews and focus groups, participants said they heard about the IMPD course opportunity from a variety of different sources, including MDOE news blasts, emails from principals and superintendents, friends who took the course in the first year of implementation, presentations about IMPD at a local school board meeting, and on the RREV page of the MDOE website.

[2] ICF submitted a separate memo in February 2022 summarizing IMPD implementation between September 2020 and August 2021.

[3] There were three IMPD courses that began in May 2022 and finished during the summer of 2022. Data collection for the 2021–2022 evaluation was closed before these courses were completed, so these courses will be included in the 2022–2023 evaluation report.

Participants in the focus groups and interviews were also asked about their motivations for taking the courses, the most common of which was that it was a requirement to apply for the RREV award. Other motivations included having the opportunity to re-evaluate their school system and look for avenues for innovation; and using methods from the IMPD course as a way to solve a problem that they have noticed within their school, school district, or the education system as a whole.

Research Question 1: How were IMPD courses implemented during the 2021–2022 school year?

A total of 75 participants representing 32 school administrative units (SAUs) attended 1 of the 7 IMPD courses that occurred during the second year of RREV implementation. There were seven IMPD courses offered during the second year of implementation. The duration and mode of instruction varied by course, with one course offering afterschool sessions, two offering self-paced virtual instruction, and four courses offering a mix of half- and full-day sessions. Overall, 75 participants enrolled in these classes, with class sizes ranging from 5 participants (Eastern Maine Community College [EMCC]-IMPD Intensive and EMCC February 2022) to 20 participants (University of New England [UNE] IMPD Asynchronous).

EXHIBIT 3. SUMMARY OF YEAR 2 IMPD COURSE IMPLEMENTATION

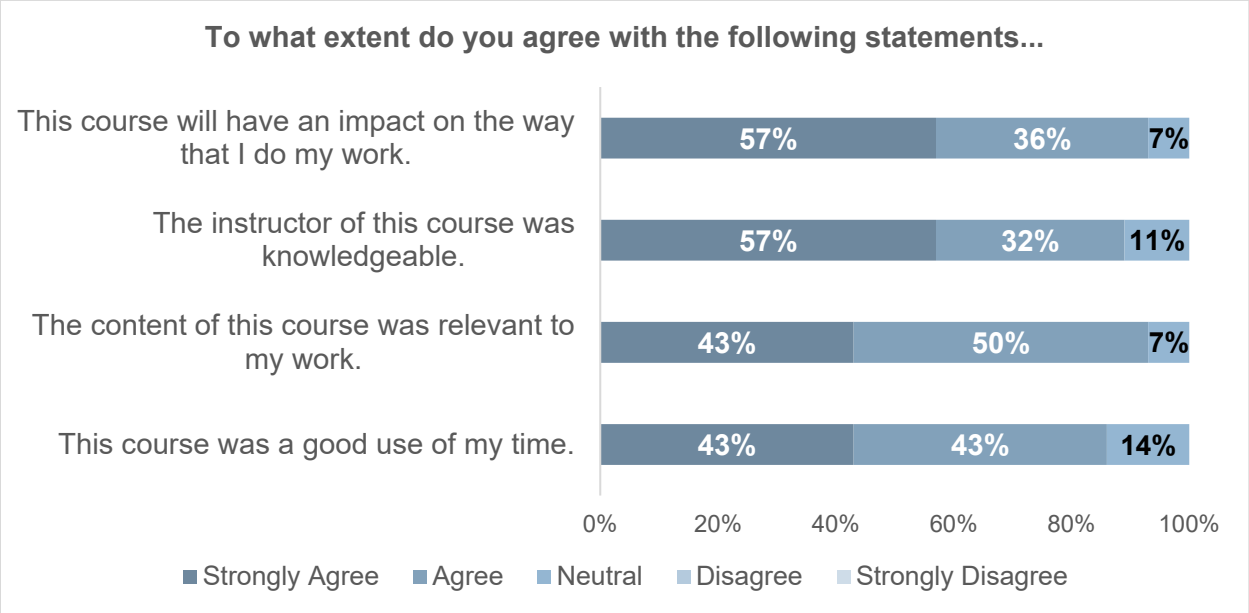
Institution	Duration	Mode	Participants enrolled	# of SAUs represented / SAUs funded
EMCC-IMPD Intensive	3 8-hour days; 1 half day	Virtual / Synchronous	5	1 represented / 1 funded
EnGiNE Asynchronous	Self-paced	Virtual / Asynchronous	15	8 represented / 2 funded
EMCC Feb 2022	2 full-day sessions; 2 half-day sessions	In-Person	5	2 represented / 1 funded
Maine Learning Technology Initiative Accelerator	4 afterschool sessions	Virtual / Synchronous	6	5 represented / 2 funded
Thomas College/ Rural Aspirations	2 full days; 5 3-hour days; 2 2-hour days	In-Person	7	1 represented / 1 funded
University of Main Foster Center Accelerator	1 full day; 2 half-days; tech support	In-Person	17	7 represented / 3 funded
UNE IMPD Asynchronous	Self-Paced	Virtual / Asynchronous	20	8 represented / 5 funded
Total	—	3 In-Person 2 Virtual / Asynchronous 2 Virtual / Synchronous	75	32 represented / 15 funded

IMPD course instructors were highly motivated to support innovation, especially those who taught an IMPD course during RREV's first year. Instructors of the IMPD courses had a wide range of backgrounds, including teaching; engineering; food science; science, technology, engineering, and mathematics (STEM); and professional development. Of the six instructors, four previously taught IMPD courses. When asked about their motivations for teaching the course, one instructor said they wanted to see schools take advantage of the funding and knew from experience that innovative programs such as outdoor and project-based learning work well for students. Another instructor was motivated to teach the course again by the opportunity to iterate and improve on their experience from the first year. This instructor explained that they felt better prepared in Year 2 to teach design thinking as a "creative learning process" through more activities and discussion than they had before, when they used more traditional teaching methods such as lectures.

Research Question 2: What worked well about IMPD implementation this year?

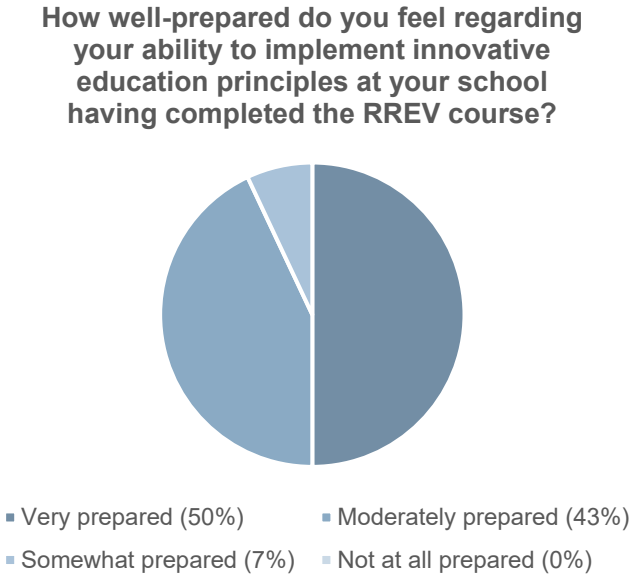
Almost all IMPD survey respondents reported that the course was a good use of their time and was relevant to their current work in education. Overall, 86% of IMPD post-survey respondents "agreed" or "strongly agreed" that the course they took was a good use of their time and that the content of the course was relevant to their work (Exhibit 4). During one focus group, a participant commented that the course overall was an "uplifting experience" and "helped [them] get through a really tough year." Additionally, 93% of IMPD post-survey respondents "agreed" or "strongly agreed" that the course will have an impact on the way they do their work. For example, one participant mentioned that teachers who took the class with no previous experience with design thinking said that they are going to use the materials to enhance their curriculum. A minority of respondents described a neutral reaction to these statements, but none disagreed or strongly disagreed.

EXHIBIT 4. IMPD PARTICIPANT SURVEY COURSE FEEDBACK



Participants felt well-prepared to implement innovation education principles after completing the IMPD course. Almost all (93 percent) IMPD post-survey respondents felt "very prepared" or "moderately prepared" to implement innovative education principles after taking the IMPD course (Exhibit 5). These results aligned with the feedback from participant interviews. For example, one course participant described plans to "build a similar curriculum" with their students because they felt that the course provided a great "step-by-step" process that helped them learn using a variety of resources, including videos, readings, and discussions.

EXHIBIT 5. IMPD PARTICIPANT ATTITUDES TOWARD INNOVATION

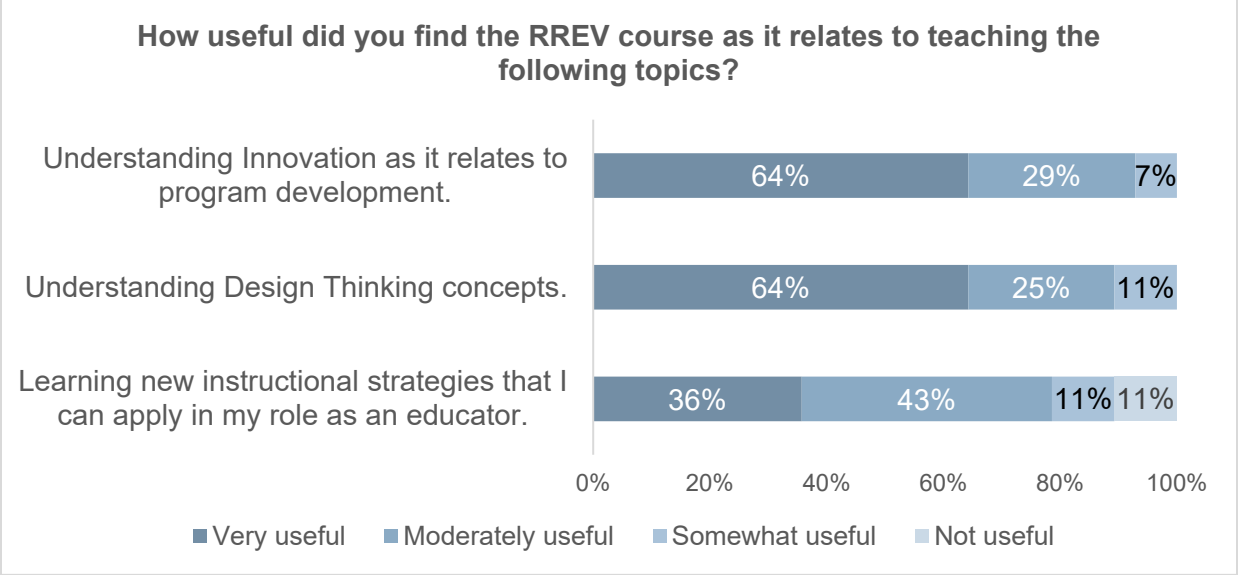


The course prompted deep thinking about the nature of innovation, which participants felt would help them overcome resistance to new ideas. Several participants described the IMPD course as a good opportunity to take a step back and rethink what it means to innovate, especially when they perceived widespread "resistance" to innovation throughout education due to factors such as teacher burnout, lack of funding, and a reluctance from administration. One participant said that some administrations see innovation as "threatening" since "school will not be going out of business anytime soon," so there is a disincentive to change compared to other industries. However, the participant said the pandemic forced a change in education, which opened up a small window for widespread innovation. They said this course "capitalized" on this change and provided the tools to strengthen their ideas for innovation.

Almost all participants rated the IMPD course useful for program development and understanding design thinking, but a smaller proportion found it applicable to developing new instructional strategies. IMPD participants were also asked on the post-survey how effectively the IMPD course taught concepts such as innovation in program development, design thinking, and instructional strategies that teachers can use in the classroom. All survey respondents thought the course was at least somewhat useful in understanding design thinking concepts and understanding innovation as it related to program development, including 64 percent who said it was "very useful" (Exhibit 6). During focus groups and interviews, IMPD participants said they appreciated that the course was "concrete" and "usable." The only topic where there was less than 100 percent agreement that the course was at least "somewhat useful" was related to whether respondents felt like they could apply what they learned to their role as an educator. Even on this topic, almost all respondents (89 percent) agreed it was at least "somewhat useful," but the proportion who said it was "very useful" was lower than the questions about their understanding of concepts. This was the only question where some respondents (11 percent) felt the course was not useful. During focus groups and interviews, some participants mentioned that certain activities related to innovation and design

thinking were “unclear” or not explained in a straightforward way, which may have led participants to view them as less useful in applying to their own role as an educator.

EXHIBIT 6. PERCEIVED USEFULNESS OF IMPD COURSE TOPICS



Participants felt that they had a better understanding of the concepts of innovation and design thinking after taking the course. During the focus groups, participants were asked about how their attitudes toward innovation changed as a result of the course. One participant said that the course helped “walk them through the process” of innovation and equipped them with the tools to better understand how to work with other stakeholders at their school. Another participant credited the IMPD course with helping them take a step back to consider potential solutions instead of their tendency to “jump to the answer” without taking time to fully consider the problem they seek to address. Additionally, participants said the course helped them realize that innovation involves constant “iteration” and “fine tuning,” and participants said they applied this approach when designing their pilot model.

The IMPD course helped participants develop a more nuanced understanding of responsive education. Participants were asked in the pre- and post-surveys to describe in their own words what responsive means to them. Most pre-survey respondents said that responsive education means meeting the needs of students “where they are,” including adapting curriculum and instructional practice in a way that meets students' social, emotional, and academic strengths. This overarching theme was also present in the post-survey, but open-ended responses also suggested that participants developed firmer ideas about what this would mean in practice in their specific context. An analysis of their open-ended responses showed more concrete examples of how they intended to be responsive to student and community needs based on lessons learned in the IMPD course. This included responses such as “listening to different perspectives and ideas to create educational systems that best meet the needs of our individual students,” "allowing students time for "brain-breaks" to move around to offset cognitive load,” and “undergoing a design process to develop solutions that are responsive to stakeholder needs.”

Participants appreciated the depth of discussion that occurred during IMPD courses. Participants had mixed experiences or knowledge levels prior to the IMPD course. Those who

previously heard of the concept said that the course allowed them to gain a "deeper dimension" of understanding for design thinking. Those who were not familiar with the concept prior to the class said that they gained skills such as testing ideas through surveys and interviews, engaging all group members, and visualizing how different ideas might align. On these overall topics, one participant mentioned that it was unusual "seeing classroom teachers go into this process to this depth," which may be because teachers are often too busy to have time to devote to thinking about innovation and design thinking.

The IMPD course provided participants time and space to explore new ideas, especially through supportive and in-depth conversations with fellow educators. Some IMPD instructors incorporated interactive elements such as group discussions and brainstorming sessions to promote engagement and collaboration among participants. Participants mentioned that these activities were good ways to interact with the content and engage with people from other schools or districts, with one participant saying the activities were "good to connect with teachers from other schools and . . . join resources" with other teachers. Additionally, several participants said they appreciated how the course provided space and time to think and develop ideas with their colleagues, especially from their own school or district. For example, one participant described the course as an opportunity to get outside of the "bubble" of normal day-to-day work and, in so doing, have deeper conversations with colleagues about what it means to innovative in their context. Another participant said the IMPD course gave them "the time to stop and think" about student needs more deeply, which they said has already led to new policies and practices in their school that would not have occurred without the IMPD course and the reflection it spurred. One instructor described the collaborative aspect of the course as "educator therapy," during which participants could think deeply about their practice and get feedback from colleagues.

> "We are completely revising our schedule so it better suits student needs . . . and changing course work [for students] so it's more hands on, high interest, high movement, environmentally focused, STEAM focused work and providing more opportunities . . . to get them engaged in their learning . . . all because we had the time to stop and think about it."
>
> IMPD Participant

Participants appreciated the flexible nature of the IMPD courses and felt that it fit well within their busy schedules. Participants appreciated that they were able to take an IMPD course that aligned well with their schedule and preferences. For example, EMCC offered a combination of in-person and virtual meetings throughout the course. Overall, most IMPD participants appreciated the flexibility of the courses and found that the structure was "thoughtful and considerate" of their time. Participants also appreciated the in-person, online, or hybrid options. One participant who took the course in person said that "having everyone in one room was really helpful" and they helped sort out some of the confusing aspects of course facilitation. Another participant who took the course online called it "something that teachers can realistically do" and thought the workload was "reasonable." Participants who took a self-paced, asynchronous course said that they were able to work on it late at night on their own time and then talk to the team in the mornings. They also said using the combination of videos, slides, and worksheets to facilitate instruction improved their learning.

Participants said they took lessons from the IMPD course back to their "day jobs" in their districts. Teachers, administrators, and support staff all stated they have incorporated or plan to incorporate lessons they learned during the IMPD course into their everyday roles. For example, one participant said they have consistently referenced class modules and videos back in their home school because these resources help them think more "globally" about education. Additionally, some participants commented that the course helped them become more "empathetic" and inclusive in their professional roles and recognize that there are many people who are "not at the table" when decisions are being made. They mentioned that the IMPD course helped them become more aware of these people, clarify student needs, and ask questions when they are unsure about what their colleagues are thinking. One participant who was a school administrator described using the design thinking process to create more changes at their school—outside of their RREV pilot.

Participants noted that their instructors and the representatives from MDOE were accessible throughout the course. Participants also mentioned that the IMPD instructors were very respectful of their time and understanding if certain deadlines were not met. Additionally, participants noted that RREV program leaders were very "transparent," "accessible," and "willing to support" them throughout the course, especially when writing the grant. As one participant put it, "the people at the state were available almost within minutes if I needed them . . . and were right there alongside us trying to make it work."

Participants and instructors described better collaboration during in-person meetings, but appreciated flexibility to attend some sessions remotely. Due to COVID-19, most IMPD courses during the first year of implementation were offered virtually. However, during the 2021–2022 year, three of the seven courses were offered in person. Many participants reported that taking the course in person helped with the collaborative nature of the process; as one instructor put it, being able to teach and collaborate in person was a "game changer." One instructor who taught in person reported that the "energy" of the course was different and noticed that more participants felt "comfortable with risk taking" within the course. Additionally, participants noted that instructors of these in-person options were still flexible enough to accommodate participants' schedules. For example, the instructor for EMCC still allowed a participant to use the web conferencing platform Zoom to join the in-person meetings due to timing or distance challenges. Further, some courses took place on school sites for the convenience of participants. Having in-person options proved to be beneficial for relationship-building throughout the course, with one instructor saying having the course in-person made it a "human attached" experience.

Courses focused on deliverables directly related to the application and pilot creation and omitted less relevant assignments. Participants who completed the IMPD course in the first year of implementation indicated that they had trouble keeping up with the pace of the course, including completing assignments on time. This year, although participants still emphasized how busy they were during the course, many appreciated that assignments did not place an unnecessary burden on their schedules. As one participant noted, the assignments and course at large were "reasonable" and "something that teachers could realistically do." Additionally, not having assignments through a college or university's learning management system was much

more "fluid" and allowed participants to use the platforms and tools they already had access to and focus more on the "big thinking" aspect of the course.

A view of the creek, the bridge connecting the fields to the woods, and the outdoor learning space in the woods at Agnes Gray.

Research Question 3: What challenges did instructors and participants experience, and what advice did they offer to improve the program?

Participants' diversity in terms of culture, experience, and professional roles contributed to meaningful conversations, but also caused some tension. IMPD participants came from a wide range of backgrounds and experience levels. As a result, some participants mentioned that navigating cultural barriers and different worldviews sometimes presented a challenge. For example, one participant planning a pilot model for Tribal schools described "difficult conversations" among various district stakeholders about the best way to serve this specific population of students, especially given their experience with mistreatment and having their concerns ignored. Instructors agreed that cultural differences and power imbalances posed challenges for the type of free-wheeling, assumptions-questioning discussions they wished to encourage. For example, one instructor commented that "tension and anxiety related to culture" made it difficult for some to "truly lean into the process." Although a challenge, one participant noted that overcoming these barriers strengthened their innovative model, calling it a "moment of reckoning" for deciding what they need for the program to be a success. In the future, IMPD instructors could work towards implementing more culturally responsive teaching material, in

addition to bringing in diverse viewpoints to describe how innovation may look different for certain groups or educational settings.

Some participants desired more explicit connections between the course content and activities and their pilot plan development. For example, one participant found that the IMPD courses did not align with their preferred way of learning. The participant said that they are "very organized and linear" in their learning, and the class sessions were sometimes "very free form." Additionally, this participant mentioned that some class activities were not always applicable to the RREV process, especially the end result of an award, which made it "hard to see the connection between the learning of the process and the practice of the process." For example, another participant said that they did an activity involving how they would respond to aliens landing on earth. Although a fun thought exercise, one participant mentioned that these activities were often "unclear" and not aligned to the RREV grant.

Participants and instructors were concerned that innovative ideas discussed in class may not translate to the real world, especially in school cultures that are unsupportive of new ideas. Participants and instructors perceived cultural and systemic obstacles to innovation in the current school environment. In the words of one instructor, many education professionals are "clinging" to systems that are outdated and do not "honor and observe inner desires of students to learn," and emphasized that this is present at all levels of education. This instructor also observed that educational professionals often struggle to find a "common language" around innovation, which leads to a resistance to change. As a result, this instructor feared that the innovative models developed within the IMPD course may run into resistance within participants' schools or school districts. Another instructor also expressed concern that teachers lack the time to innovate, since "it is hard to be innovative when you are burnt out."

Some participants, especially in rural areas, desired more time and focus on community outreach and consensus building. Some participants were concerned that the connection between the IMPD course and a RREV award was not reflective of the needs and capacity of rural communities. They felt that in small, close-knit communities, educators need to do "intentional work" to gather local input; explain the goals and opportunity of RREV; and give teachers, families, and other community members opportunities to shape the program so they "do not feel like this is happening *to* them but that it's happening *with* them." One instructor also pointed out that rural schools often have limited staff capacity to complete paperwork and take practical steps to apply for a RREV award. Taken together, the need for community input and the limited staff capacity poses a challenge for rural schools, especially given the expected turnaround time between the IMPD course and the RREV application. This instructor recommended that IMPD instructors and MDOE should assume that participants do not currently have the capacity to create innovation and start with teaching them how to develop this plan.

Some participants struggled to balance open-ended thinking with their interest in developing a tangible plan. As noted earlier, many participants appreciated the time, space, and encouragement afforded by the IMPD course to "think big" and develop new approaches to meeting students' needs. However, a few participants desired more practical guidance about how to translate their ideas into a RREV award. One participant recommended that future participants do some "background thinking about . . . where they want to go" regarding the innovative model, which would help the teams focus on using the class to refine and improve their ideas. However, given the collaborative nature of the course, many participants also

emphasized how important it was to be open to group discussions and willing to refine your model throughout the course. To achieve this, one participant recommended that IMPD instructors should "teach and apply" what they are learning as the course progresses, so that participants are able to both think for themselves and collaborate with others on how to improve their innovative model throughout the course.

Lessons learned & recommendations

Participants desired more time devoted to developing the innovation and writing their pilot plan. Some participants wished the course had better prepared them to write the actual pilot plan, especially by providing tangible tools such as a checklist to guide them through filling out the application. One participant commented that the "big thinking" aspect of the course "gave [them] the space to come up with a really good idea," but felt frustrated because she did not understand the specific elements that needed to be included in the pilot plan, which meant she had to spend a lot of time revising her plan. Another participant mentioned that they would rather have the group activities more closely align with the grant application so they can learn how to incorporate the activities in the grant writing process.

One participant recommended that they have time to gather feedback from students and other stakeholders before they start writing the grant. This participant recommended that the beginning of the course focus more on gathering data and feedback to inform the innovation. In the post-survey, they said "it felt like we were required to write parts of the grant before we'd been able to get enough data/information from our stakeholders. I would like to see the course focus more on gathering and evaluating stories and info from students and staff *first*, so that it will help shape ideas, rather than us having to come up with the ideas and then tailor them to the feedback." However, other participants said that they preferred having a look at the RREV grant application earlier in the process so that they "could see the side-by-side process more clearly of what I was learning and where it fit in the grant." As a result, future iterations of the course might benefit from making the application accessible to the participants immediately while still allowing them time to consider different ideas before having them begin writing the grant.

Some participants recommended that instructors "sync" the course assignments with the steps to completing the grant proposal. In the post-survey, some participants mentioned that certain assignments felt "unnecessary and rushed," which led some to feel like they were "checking off a box instead of authentically connecting" to the course material. One participant said, "It seemed like we were learning great stuff about preparing through listening . . . but then we were asked to have our innovation ready to write about." Therefore, they recommended that the course take participants through the early work of gathering data and ideation in a way that aligns more with the pilot plan writing process.

Participants recommended that the structure of the course could be more organized. Some participants commented on the structure of course assignments, including one who felt they could have been delivered "more sequentially" and "more deliberately." Specifically, this participant recommended having the digital materials immediately available on the first day of the course or ahead of time for participants to look at before the course. Another participant said that some course content was "redundant" and did not always align with the grant application, so recommended the course follow a more linear progression. Finally, one participant who is a teacher mentioned that it would be helpful to align the dates of the IMPD course better with the

school year. This participant had to take the course while on vacation with their family, and was concerned others would have to do the same in the future, or would choose not to participate because of such a scheduling conflict.

One instructor recommended creating a logic model during the course. One improvement that could be made is providing time within the course to develop and refine a logic model. Since some participants are unfamiliar with the logic model process, one instructor noted that it would be particularly helpful to create the innovative model and then subsequently create a logic model to accompany it, so participants "walk out of the course" with tangible resources ready for implementing. Since the IMPD course is a requirement to apply for RREV funding, the instructor mentioned that having participants develop and complete these resources throughout the course would help with buy-in and help "guide [the participants'] process going forward."

Chapter 2: The Implementation of Innovative Education Models at Adopter Schools

Background

RREV funding supports the implementation of innovative education models developed through an IMPD course and outlined in a pilot plan. Funding is allocated equally across Maine's nine school superintendents' regions and awarded to eligible SAUs based on student need as measured by nine metrics defined in the Coronavirus Aid, Relief, and Economic Security (CARES) Act. To be eligible for a RREV award, an SAU must have a pilot team that includes at least one teacher and one administrator who has completed an IMPD course and submitted a pilot plan with a budget, among other criteria.[4] In August 2021, MDOE awarded RREV funding to 9 SAUs (henceforth referred to as "Adopter Schools") to implement pilot plans beginning in the 2021–2022 school year.

Research questions

This chapter focuses on the implementation of innovative pilots at the 9 Adopter Schools that received a RREV award for the 2021–2022 school year. Specifically, this chapter addresses the following research questions:

1. What educational models have Adopter Schools implemented during the 2021–2022 school year?
2. In what ways are these education models innovative and responsive?
3. What challenges have Adopter Schools encountered while implementing their pilots this year?
4. What successes have Adopter Schools experienced this year?
5. How have these education models influenced student academic and non-academic outcomes?
6. To what extent were students and families satisfied with the responsive education opportunities offered through RREV?
7. What lessons can be learned that would be helpful to future schools adopting innovative models?

Methods

This chapter presents themes and patterns that emerged from detailed case studies of all nine Adopter Schools (Appendix A). Each case study was produced by a two-person evaluation team based on one virtual site visit during the fall 2021 semester and one in-person site visit in the spring 2022 semester. Before and during these site visits, each ICF team conducted a variety of data collection activities that are summarized in greater depth in each case study. Overall, these included:

[4] Additional information about eligibility criteria and need metrics is described in the document Funding Eligibility Model for Innovative Pilot Implementation available at https://www.maine.gov/doe/sites/maine.gov.doe/files/inline-files/Eligibility%26Need_0.pdf

- A review of documents, including the pilot plan, budget, news articles, program descriptions on school websites, and other relevant artifacts described in each case study.
- Interviews with key program stakeholders, including teachers, administrators, and community partners as well as the RREV coach.
- Focus groups and/or interviews with students and parents.
- Observations of program activities in their natural settings.

All interviews followed semi-structured protocols aligned with the background of the interview subject; case study teams adapted the protocols for each school's context. Interviews were transcribed and coded for themes aligned with the research questions, as were observation notes.

Each case study also summarizes data from surveys of students directly involved in the pilot and their parents. These surveys focused on parent and student satisfaction and perceptions about the pilot's effects on student learning.

The primary point of contact at each school was given an opportunity to review and provide feedback on the case study for their schools.

Research Question 1: What educational models are supported by RREV funding?

The nine Adopter Schools awarded RREV funding in August 2021 are implementing a wide range of educational programs. These are summarized in Exhibit 7 and explored in greater detail in the individual case studies.

EXHIBIT 7. ADOPTER SCHOOL EDUCATIONAL PROGRAMS

Awardee*	Grade†	Pilot: At a Glance
Katahdin RSU #89, Region 1	Pre-kindergarten (PreK)–12	Students take part in *Connect, Reach & Teach Each Child with Outdoor Learning*, which uses outdoor education to support emotional, cognitive, and physical development. Teachers receive professional development to learn how to integrate outdoor learning into their curricular units.
Brewer Region 2	7–12	Students in the *Nu* program earn credit through a mix of synchronous and asynchronous virtual courses. A Remote Learning Specialist provides support and guidance, and students are eligible to participate in extra- and co-curricular activities such as Junior Reserve Officer Training Corps, band, and athletics.
School Union 76 (SU76), Region 4	PreK–12	Students participate in *Classrooms in the Community*, which offers place-based educational opportunities throughout the district. The SAU will improve its outdoor infrastructure, including an expansion of a nature trail and the creation of an outdoor classroom. A Director of Place-Based Education supports teachers in the implementation of on-campus and community-centered place-based education initiatives.
St. George Region 5	Kindergarten (K)–12	St. George serves students in K–grade 8, but has partnered with the Mid-Coast School of Technology to expand career and technical education (CTE) to its students during and after graduation through high school via its *Makerspace Initiative*. Students receive integrated CTE to

		develop career-oriented skills. The school will build a K–8 Makerspace Building.
Camden-Rockport MSAD #28, Region 5	K–4	Students participate in daily outdoor learning aligned with standards through *Out and About: The Outrageous Outdoors!* Two Outdoor Liaisons work with teachers to recruit local experts to collaborate with each grade. Staff participate in a professional development workshop to learn how to integrate outdoor learning into content standards. Students complete a place-based outdoor learning project by the end of each school year.
Agnes Gray MSAD #17, Region 6	PreK–6	Students are provided with project-based outdoor learning opportunities via *Teaching Outside: The Box*. The SAU will construct a yurt for outdoor classes and activities throughout the year. An Outdoor Learning Coordinator adapts the curriculum to outdoor learning, provides professional development on facilitating outdoor instruction, and co-teaches outdoor lessons. The program establishes the Outdoor Volunteer Corps to get parents and community members involved in the program.
Mt. Blue RSU #9, Region 6	11 & 12	In the *Oxbow Outdoor Pilot* program, students participate in two semester-long English language arts classes that combine wilderness-related reading with outdoor activities such as woodworking and camp making. The high school will expand its outdoor infrastructure to provide a non-traditional setting for classes and purchase a minibus for field trips.
HCA Region 7	11 & 12	Students participate in *Change Your World!*, a community-based learning program offering internships, field work, service learning, and early college/vocational courses. A Community-Based Learning Coordinator builds relationships with local organizations and connects students with them.
Noble RSU #60, Region 9	5–8	Students can apply for a remote learning program offering flexible learning and individualized instruction. They also receive social and emotional support though a program called *Be Well Connected*. Students join field trips and in-person activities to feel connected with their peers.

* For complete school names and district information, see the corresponding case study in the appendix.

† These grades are the 2021–2022 school year focus. Some Adopter Schools plan to expand to more grade levels in the future.

Note: **RSU** stands for regional school unit, **SU** stands for school union (e.g., School Union 76), and **MSAD** is Maine School Administrative District.

Across the portfolio, there were several key elements that appeared in multiple Adopter Schools' educational models. These included:

Project-based learning. These educational models invite students to develop and implement projects that reflect their individual interests and align with academic content. Students usually work closely with an educator throughout their projects, and often demonstrate mastery through the creation of tangible outputs and presentations to peers. For example, the program at Camden-Rockport culminates in a place-based outdoor learning project where students complete weeklong or monthlong team projects by the end of the school year to apply what they have learned, such as creating a resource on how to identity plants and flowers. Another school, Mt. Blue uses hands-on projects such as woodworking and camp making to supplement in-class

wilderness-related reading. Each of these awardees saw the value in "learning by doing" and thus made projects an integral part of their programs.

Community partnerships. These programs leverage their pilot programs to establish and strengthen partnerships between the school and local organizations. For example, HCA's *Change Your World!* program connects students with local businesses and other organizations through internships, field work, and service learning. Other programs also cultivate relationships with community organizations to coordinate field trips or outdoor learning activities. Another example is SU76's *Classrooms in the Community* program, which leverages community partners, such as Island Heritage Trust, to create field trips and afterschool programs to get students excited about nature. These community connections expand the classroom for students and provide the opportunity to apply what they learn in the classroom to the real world.

Outdoor education. These programs involve a wide range of learning opportunities outside the traditional classroom. In many cases, programs are centered around new outdoor facilities or equipment. For example, Brewer and Mt. Blue are each constructing a yurt to provide students with an outdoor alternative to the traditional classroom setting, and Katahdin is providing their students with outdoor gear such as boots, rain pants, and bug nets to engage in outdoor learning. Other programs, such as the one at SU76, hired new staff members to support their outdoor learning initiatives, which include aligning outdoor activities with the curriculum and providing teachers with professional development opportunities rooted in outdoor or community-based instruction.

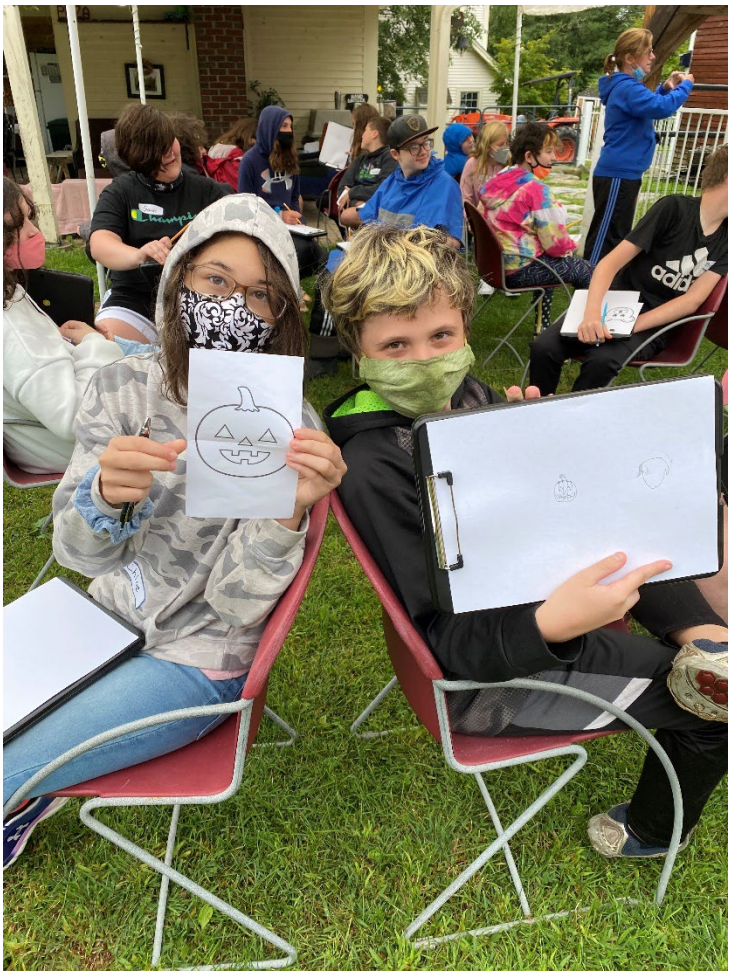
Student-directed learning. These programs offer students more freedom and flexibility to choose classes and activities that interest them. For example, Brewer's *Nu* program allows students to choose Apex Learning Virtual School courses that align with their interests while staying on track for graduation. Students at HCA are also given the freedom to explore their interests, including participating in internships and service-learning opportunities with community organizations.

Online learning. These programs provide students with a virtual alternative to traditional in-person education. Brewer created its *Nu* program to offer students alternative ways to meet graduation requirements, including a variety of synchronous, asynchronous, and in-person engagement opportunities. Similarly, Noble offers students the opportunity to learn from home while receiving social and emotional wellness support through a program called *Be Well Connected*.

Career and technical education (CTE). These programs include learning opportunities centered around career-oriented skills. St. George is building a Makerspace Building to offer students the physical tools and resources to develop their technical knowledge and skills. Mt. Blue is using outdoor education activities such as woodworking, camp making, and canoeing to teach students about engineering.

Adopter Schools submitted a budget that outlines how they intend to use their RREV award, which they must spend by the end of MDOE's RREV grant, which currently expires in June 2023. Schools submitted a budget that outlines how they intend to allocate their RREV funding, but they have substantial flexibility to shift allocations as they implement their pilots as long as at least 67 percent is applied toward direct service to students. Exhibit 8 summarizes Adopter Schools' planned budgets, from which a few themes emerged:

Five Adopter Schools devoted the majority of their RREV award to personnel services and employee benefits. Brewer, Noble, HCA, SU76, and Agnes Gray allocated funding toward hiring a new full-time position. For example, Brewer hired a full-time Remote Learning Specialist to oversee all aspects of the *Nu* program. Similarly, Agnes Gray used a large portion of their funding to hire a full-time Outdoor Learning Coordinator to adapt the curriculum to outdoor lesson plans, provide professional development on outdoor instruction, and co-teach outdoor classes. The other four Adopter Schools allocated less toward personnel services and more for property or professional services.



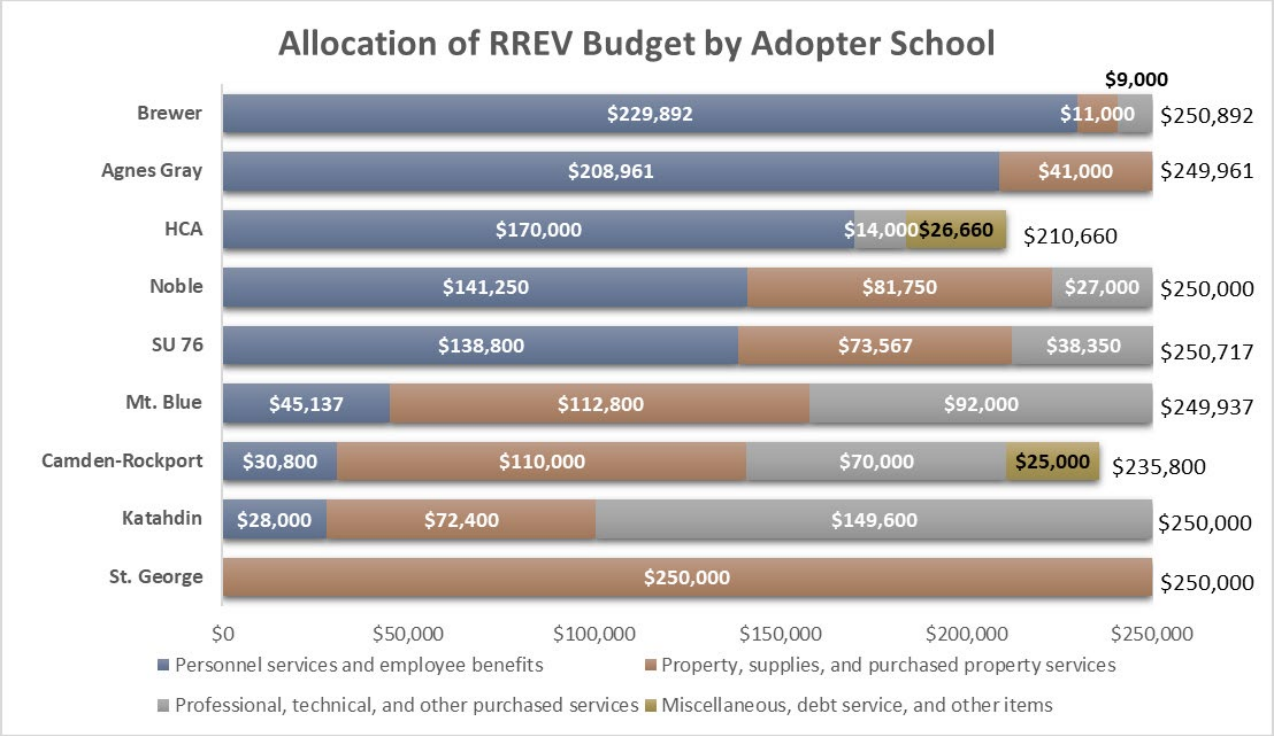
Students from Noble visit the School House Farm on a field trip.

One Adopter School allocated all of its RREV award to building a new property. St. George is using the entirety of its RREV funds to construct a K–8 Makerspace Building that will provide students with a physical space to support their CTE programming initiative. St. George intends to use this space to offer students the physical tools they need to design, build, and create, including computers, 3D printers, and CNC machines. Two other Adopter Schools—Mt. Blue and Camden-Rockport—allocated more than $100,000 of RREV funding toward property, supplies, and purchased property services. Mt. Blue is using most of these funds to buy a yurt for outdoor learning and a minibus for student transportation. Camden-Rockport is using a majority of their property funds for the development and construction of outdoor learning sites.

Seven Adopter Schools allocated some of their RREV award toward professional and technical services. These programs allocated a portion of their RREV funding toward offering teachers and staff professional development and other support services throughout implementation. For example, Katahdin allocated a majority of their RREV funding toward professional services such curriculum development and ongoing teacher support during implementation.

Two Adopter Schools allocated a significant portion of their RREV award toward transportation. HCA and Camden-Rockport allocated about $25,000 of their budgets for student transportation. HCA did so because their *Change Your World!* program will require transporting students to and from their community-based internships and service opportunities. Camden-Rockport will be allocating money toward transportation for off-site field trips as a part of their outdoor learning initiative.

EXHIBIT 8. AWARD FUNDING EXPENDITURES



Research Question 2: In what ways are these education models innovative and responsive?

All of the pilot models included innovative and responsive elements that are described in their respective case studies. In this section, we describe themes that emerged from across the portfolio. We include some illustrative examples, but did not include every possible example for each finding.

Pilot models cultivate student agency to pursue their own curiosity and interest. Most pilots sought to empower students to make more choices about both *what* and *how* they learn. In many cases, especially pilot models that served older students, Adopter Schools offered students more discretion to choose their courses, often with individualized guidance from a faculty advisor. For example, Brewer's *Nu* model allows students to choose online courses and set their own pace, with guidance from an educator who knows them well and can provide individually tailored advice. During a focus group, Brewer students credited the individual support they received from the program with helping them become more confident in themselves, which in turn helped them take more risks exploring classes and activities they otherwise might not have tried. Several Adopter Schools also offer students opportunities to exert more control over how they learn. These often include project-based learning approaches in which students collaborate with teachers to choose topics and methods that resonate with them. For example, Noble invites students to undertake "passion projects," in which each student explores a topic of interest, with support from their learning coach, culminating in a presentation to their peers. Pilot models focused on younger students also provide opportunities for students to pursue their curiosity, often by offering students more space and time to explore

the world around them. Several stakeholders described their approach as a way to give students more voice in their education, which they felt would foster students' motivation and ultimately cultivate a lifelong love of learning.

Pilot models offer students opportunities to draw connections between core content and out-of-classroom experiences. A core element of the RREV program is to offer students learning opportunities outside a traditional classroom, and most pilots took this concept further by encouraging students to draw connections between those experiences and what they learn in the classroom. Adopter Schools often use outdoor space, field trips, and internships as opportunities to apply core subjects in new contexts. Several stakeholders explained that these diverse learning contexts helped students stay more engaged and excited to learn—especially when the activities aligned with their personal interests. For example, Mt. Blue's outdoor education model is built on a popular outdoor club but includes more intentional connections between outdoor activities and English language arts (ELA) content, especially wilderness-themed literature. School leaders also posited that offering novel environments to apply academic skills would deepen students' learning and help them retain key concepts from the classroom. For example, HCA's model pairs community-based learning experiences, including internships and fieldwork, with guided reflection assignments in which students are asked to write about connections between their core subjects and their experiences outside the school.

Pilot models offer students new opportunities to learn and demonstrate mastery beyond traditional classroom methods. Many innovative pilots include a diverse array of activities and settings for students to learn and thrive. A few stakeholders observed that this approach offers students more freedom to explore different ways of learning to find what works for them. For example, St. George's program involves the development of new ways for students to demonstrate learning besides traditional assessments. Similarly, HCA encourages students to try different community-based learning activities and provides time and support for students to reflect on both what and how they learn. This innovation has the potential to help students who struggle in a traditional classroom setting to avoid or shed the label of a "bad" student. Instead, they can find an approach where they thrive, and, in so doing, reconceptualize their identity as a learner.

Pilot models seek to address the whole student, including their academic, mental, social, emotional, cognitive, and physical needs. A common theme across all pilot models was the way they drew connections between students' academic performance and their general well-being. During interviews, many stakeholders noted that the COVID-19 pandemic revealed how much students' mental, social, and emotional states influence their ability to learn. The pandemic also added to stress, which elevated the importance of addressing students' general well-being. Pilot models used diverse strategies to address the whole child. A few Adopter Schools, such as Noble, directly address students' mental and emotional well-being by adding staff positions devoted to student wellness or providing professional development to teachers about how to support students' mental and emotional health. Other programs integrated wellness components into other activities, such as setting aside more time for student reflections or providing more opportunities for social interaction while learning.

Pilot models both capitalize on and deepen student connections to local community culture and assets. A consistent theme across pilot models was the way in which culture and community are centered and integrated in project activities. Adopter Schools that are implementing outdoor education projects are leveraging the natural assets of their local

communities to optimize student learning experiences. For example, Agnes Gray regularly implements educational programming such as Forest Fridays, in which students participate in one-off outdoor lessons made possible by the school's and broader community's abundance of natural assets (e.g., rivers and woods). Likewise, SU76's access to natural preserves has made possible the creation of outdoor learning environments such as the Maple Swamp Nature Trail.

Pilot models address the learning needs of very young students. Several pilot models intentionally include students younger than those traditionally served by other programs or interventions with similar content areas. For instance, St. George's program extends CTE programming to students starting in kindergarten. In addition, St. George is creating a career pathway throughout each student's entire educational career, starting in kindergarten. A number of Adopter Schools serve a PreK student population. Particularly noteworthy is Camden-Rockport's nature-based PreK program, which is the first public school PreK program in the state to be facilitated almost completely outdoors. Katahdin's and Agnes Gray's programming also extend to PreK students.

Research Question 3: What challenges have Adopter Schools encountered while implementing their innovative education models?

ICF collected data for these case studies during the first year after schools received their RREV awards, so these findings focus on implementation challenges during the initial rollout of a new education model. In the report submitted at the end of the grant period, we expect to have more information about how Adopter Schools have addressed these challenges—as well as new challenges that have emerged.

The infusion of resources for a specific program can spur confusion or resentment among teachers not directly involved in the pilot model, especially given the timing of the award announcements. Most pilot plans were developed by relatively small teams typically composed of one teacher and one administrator and announced at the beginning of the school year. For some schools, the small size of the pilot team and the late announcement caused some confusion about what the model entailed, including who was eligible to participate and what was expected of teachers. For example, some middle and high school teachers at Katahdin felt disconnected from the RREV pilot model, which they perceived to be exclusive to the elementary school, at least during the first year. Similarly, teachers at various schools within SU76 reported feelings of uncertainty as to what the RREV award entails and what they are able to do with it. One teacher at Camden-Rockport speculated that the timing of the RREV program startup, which coincided with the beginning of the academic year in August 2022, made it challenging to thoughtfully introduce and explain the grant requirements to school staff, who were already inundated with back-to-school responsibilities.

Innovative programs often require staff with unique combinations of skills and experience, who are not always easy to find. Several stakeholders acknowledged that finding the right person to implement their innovative model has been challenging, in part because of the geographic isolation of some schools and the tight labor market in the fall of 2021. Many stakeholders also noted that they face special challenges because the new roles envisioned by their pilots often required someone with a unique set of skills and background. For example, the

A view of the land and woods near Mt. Blue that are used for outdoor instruction in outdoor and survival skills.

St. George pilot seeks to expand CTE to earlier grades. This approach is innovative because CTE is traditionally reserved for older students, but that is also why it is challenging to find a teacher who has both the technical CTE background and experience teaching younger children. Similarly, Adopter Schools implementing outdoor education models need a teacher who is comfortable in both the classroom and natural environments. Virtual schools such as Brewer and Noble also described the need for a new staff position that could handle a wide range of responsibilities, including teaching, counseling, and technical support roles. Brewer was able to find someone with these skills, but Noble decided to delay hiring during the first semester so they could give more consideration to the job description and required background needed for the role.

Implementing an innovative educational model has often placed extra demands on school staff. It was common for pilot projects to place extra demands on school staff, including some who were not directly involved in developing the pilot. These demands often related to first-year implementation activities, such as attending professional development on the new model or covering extra classes so a colleague could help get a program up and running. In a few cases, schools hired from within when filling a new position for the innovative model. This approach allowed schools to leverage institutional knowledge and local connections, but often involved trade-offs—for example, when the people selected had to reduce their other teaching load. Several schools commented that these changes were especially challenging during the 2021–2022 school year because teachers were already under strain and substitutes were difficult to find due to the pandemic. While some of these concerns diminished over the course of the school year as pilot models got up and running, some Adopter School staff predicted that integrating these innovative education models into their long-term educational strategy would require sustained commitment and investment from all school staff. For instance, the integration of the *Nu* program at Brewer requires ongoing time and effort from Brewer high school staff, especially school counselors, to support the program. Counselors, for example, have to align classes taken online with district graduation standards and extracurricular eligibility criteria.

Likewise, Camden-Rockport administrators shared that this pilot model is the beginning stage of a longer-term strategy to institutionalize outdoor learning as a teaching and education standard for all students, meaning that all teachers will eventually be expected to incorporate outdoor learning into their curriculum. These changes reflect the long-term goal of creating systemic change in schools, but also entail sustained effort and commitment from educators across each school.

Changes in school or district leadership roles have required some schools to rebuild administrative support for the pilot. Although most Adopter Schools described strong support for their innovative models from school and district leadership, a couple of schools experienced leadership turnover that led to some setbacks during the first semester. For example, the principal at Mt. Blue was serving as interim superintendent for the district at the time the pilot model was developed but came back to her principal role during the pilot implementation. Stakeholders observed that this disruption meant her perspective was not fully reflected in the pilot plan, and led to the class being shortened from a full-year course, as originally envisioned, to a semester-long class. Staff turnover has also caused challenges at SU76 and Agnes Gray, where individuals who were instrumental in developing the pilot models left their roles during the early stages of implementation. In both cases, stakeholders noted the departure of these individuals created a leadership vacuum, leading to some uncertainty by district leadership about the goals of the innovative education models. By the end of Year 1, some projects experienced further staff attrition. For example, the place-based integration education specialist at SU76 announced she was exiting her role, effective June 2022. This role is to be filled by a science teacher from Deer Isle-Stonington Elementary School who was integral in the development of the pilot model and writing the original proposal.

Supply chain disruptions and complicated procurement processes have delayed some pilots' infrastructure components. Most pilot models that involve new infrastructure found construction projects took longer than expected, especially during the fall semester. These delays were often attributed to pandemic-related supply chain bottlenecks for construction materials or challenges in finding the right contractor. Some Adopter Schools also experienced delays with local permitting processes for new buildings. Despite the challenges, the Adopter Schools were still confident they would eventually complete their construction projects. While these delays persisted, schools often used the time to focus on other aspects of their pilot models, such as teacher professional development, onboarding new staff, and developing the scope and sequence of a new curriculum. By the end of Year 1, Adopter Schools made progress in implementing construction progress. For example, Agnes Gray's yurt structure was approved and ordered, with assembly anticipated to take place in summer 2022. Camden-Rockport and SU76 also made substantial progress in the development and construction of outdoor learning sites.

The pandemic continued to limit in-person activities envisioned by some Adopter Schools. Many pilots involve in-person activities that occur outside a traditional four-walled classroom, and continued effects of the pandemic have forced some Adopter Schools to rethink or delay these aspects of their models. For example, Brewer and Mt. Blue reported that the continued effects of the pandemic made it difficult to plan field trips and overnight events. Likewise, COVID-related concerns posed a significant obstacle to community partnerships, both because of changes to partners' models and more frequent disruptions due to staff illnesses. For example, HCA found that some businesses or local organizations were not ready to bring

on student interns or commit to fieldwork partnerships until they sorted out their "new normal." Several Adopter Schools also commented that unpredictable COVID-19 waves and staff absences made it difficult to plan events and initiatives.

An outdoor shelter built by 8th-grade students at Sedgwick Elementary School (SU76).

Some schools wished to learn from others' experiences but have not been able to find relevant information. An innovative program by nature breaks new ground, which poses a challenge because schools do not have the benefit of others' experiences or lessons learned. Some stakeholders described feeling energized by the opportunity to try new approaches, but a few also noted that the absence of proven models or resources could be frustrating. For example, stakeholders at St. George noted that CTE resources are generally developed for secondary students and teachers and thus do not directly apply to their program for younger students. Similarly, stakeholders at Brewer and Noble commented that much of the guidance they encountered for virtual education programs assumes students will be fully remote, and therefore may not apply to programs with a mix of in-person and virtual offerings.

Classroom management and coordination between educators have posed challenges for outdoor education models. Some teachers involved in outdoor education models observed that they needed to pay greater attention to student behavior and safety when students were learning outside. A few stakeholders said these models also present logistical challenges for coordinating space and outdoor equipment, especially when programs involve scaling up and formalizing an existing club or program. In response, some Adopter Schools planned to provide teachers with professional development related to classroom management outdoors, and to institute systems for reserving space and supplies for outdoor activities. One important lesson learned with respect to this challenge was the creation of dedicated staff positions focused on outdoor learning. Agnes Gray created an Outdoor Learning Coordinator position to support outdoor classroom management. This was a major driver in helping teachers feel more comfortable with using outdoor space. Several teachers at Camden-Rockport indicated that such a position at their school would be helpful in building their confidence for outdoor learning.

Schools perceived that some positive outcomes of their pilot programs would be difficult to measure. Stakeholders at all pilot schools expected that participating students would experience academic benefits in core subject areas, but many also anticipated student gains beyond those typically measured in these classes. While academic gains can readily be measured, some stakeholders expressed concern that other student benefits might be more difficult to document. For example, stakeholders at Mt. Blue noted that their pilot program

teaches both ELA concepts and outdoor knowledge and skills, and while the former can be assessed through ELA classes, the latter are harder to measure. During the first year of implementation, many Adopter Schools were developing strategies to measure the full extent of student learning they felt was occurring through their pilot.

The role of the RREV coach was not clearly understood by all stakeholders during the first semester, but the introduction of more structure and guidance in the spring eased these concerns in the spring. Several stakeholders, including school staff and RREV coaches, described a slow start to this component of the RREV program, although by the spring they felt better about their roles. Concern about this component was expressed by educators at Adopter Schools as well as by some of the RREV coaches themselves. Specifically, some RREV coaches felt uncertain about what support they could or should provide, such as whether to offer support specific to the model, innovation in general, or simply to respond to ad-hoc requests. For example, one RREV coach described ineffective meetings during the first semester because neither she nor the school leaders were clear about what they should discuss, or even who should set the meetings or agenda. Similarly, some schools did not understand the purpose of the RREV coach or how they could help. Some educators also expressed confusion about who the RREV coach worked for, which led to hesitancy about sharing information out of concern that the coach would disapprove if they wanted to revise their approach. Despite these challenges during the first semester, educators and RREV coaches agreed that the coaching model improved throughout the year and was well-positioned for 2022–2023. RREV coaches appreciated the regular coach check-in calls with MDOE and their fellow coaches. Specifically, RREV coaches commented that these calls offered valuable opportunities to learn from each other and obtain clarifications from MDOE about policies or expectations. In addition to the check-in calls, several RREV coaches commented that developing a logic model was a helpful exercise because it helped Adopter Schools conceptualize the big picture of their pilot model, especially how all the component parts fit together. Finally, RREV coaches offered positive feedback on the coaching framework that MDOE introduced in the spring based on input from the Regional Education Lab Northeast & Islands and Region 1 Comprehensive Center. In particular, RREV coaches appreciated how the coaching framework provides a sequence and more detailed description of RREV coaching activities.

Research Question 4: What successes have Adopter Schools had so far?

Implementing an innovative model has fostered a sense of common purpose at Adopter Schools. Stakeholders frequently characterized their pilot as a unifying force, which they felt would promote greater motivation among students and teachers at their school. For example, stakeholders at Noble said they were motivated by the opportunity to show that a new approach could succeed. Similarly, Agnes Gray educators described enthusiasm across the school for supporting students with adverse childhood experiences (ACEs). Several stakeholders said implementing an innovative education model was energizing, although some cautioned that they expected the honeymoon period to wear off.

Pilot models have deepened connections between the school and the community. Most of the pilot models leverage unique local assets and in so doing help integrate the school with the community. Stakeholders involved with outdoor education models often characterized their program as an opportunity for students to explore their surroundings and develop greater

appreciation for their community and its culture. For example, stakeholders at SU76 characterized their approach to outdoor education as a way to help students connect with the community's unique fishing culture, which they felt would help students stay engaged in their learning and their community. Similarly, St. George leadership consulted with community working groups to develop its CTE pilot and anticipates its program will contribute to the long-term economic health of the area. Some programs also created more formal agreements with local organizations, which they expect to provide long-term learning opportunities for students.

Developing a pilot plan has helped schools become more intentional about drawing connections between out-of-classroom activities and core academic content. Many of the innovative models are rooted in informal programs or clubs that existed in some form prior to the RREV award. Several stakeholders commented that the RREV program provided an impetus for school leaders to be more intentional about how these programs are structured and how they were connected to core academic content. For example, there has been an afterschool outdoors club at Mt. Blue for many years, but this program did not typically involve an explicit academic component. Mt. Blue educators explained that their RREV pilot program has helped them realize the full potential of this outdoor club by giving them time and resources to develop academic content to pair with outdoor activities, such as reading wilderness-related literature. Stakeholders at Agnes Gray offered similar comments when explaining how their *Teaching Outside: The Box* builds on an existing culture of outdoor education, but RREV funding provides for a staff position and outdoor infrastructure that can transform these less-formal activities into a more rigorous program.

Pilot models responded to emerging student needs resulting from the pandemic. Several innovative models were developed in response to the physical, emotional, and educational challenges brought forth by the COVID-19 pandemic. The development teams for these pilots often credited the IMPD course with giving them the creative freedom to design these programs. For example, the pilot team from Noble described how they noticed more signs of depression and isolation in their students since the onset of the pandemic, and the IMPD course allowed them to conceptualize their ideas for incorporating well-being into virtual learning. Stakeholders involved in outdoor education models also frequently commented that their approach was informed by student interest in being outside during the pandemic.

Most educators at Adopter Schools have embraced the innovative models. Stakeholders across the Adopter Schools described positive feedback from school staff about the innovative education model. In particular, they said, educators within their schools have appreciated how pilots were responsive to needs they had observed themselves. Several educators also liked how pilots leveraged the local culture and resources, such as the school's natural surroundings or local organizations in the community. For example, one teacher at SU76 said they have never seen as much enthusiasm for a schoolwide initiative.

Research Question 5: How have these education models influenced student academic and non-academic outcomes and the educational culture at Adopter Schools?

Each innovative pilot was developed to respond to local needs and opportunities and has context-specific timelines and goals. Progress toward these goals, including Year 1 outcomes,

is discussed in greater detail in the individual case studies. This section summarizes key findings and trends in the outcomes across all nine schools.

An outdoor classroom along the nature trail at Deer Isle – Stonington Elementary School (SU76).

Almost all students who directly participated in a RREV-supported innovative educational model demonstrated academic growth during the first year of implementation. As a condition of their RREV award, every Adopter School was required to identify a measure of student academic/educational growth and establish a target proportion of students who would demonstrate growth over the school year. These measures and targets were determined by the school based on their particular program model and theory of change, and did not involve any comparison groups or other counterfactuals. Overall, 91 percent of students (n=1,021) directly involved in a RREV-supported innovative pilot demonstrated academic growth on their school's specified measure. At the school level, six out of eight Adopter Schools met their targets for student academic growth.[5] In addition to the school-defined measures of academic growth, ICF administered a survey to students in grades 4–12 who were directly involved in RREV pilot. Overall, 74 percent of students who responded to the survey (n=333) somewhat or strongly agreed that the RREV-supported program helped them learn this year, and 86 percent said they were glad they participated in their school's RREV program.

School staff and parents attributed improvements in student socio-emotional health and well-being to innovative pilot model activities. A common theme across Adopter Schools was the perception that innovative pilots supported students' social-emotional health and well-being. Some Adopter Schools, such as Noble and Agnes Gray, made student social-emotional health and wellness a core component of their program models, which reflected the specific

[5] St. George did not set an academic growth target during 2021–2022 because the entire RREV award was devoted to building physical infrastructure, which was not completed during the first year.

needs of their student population. Even schools that did not specifically integrate wellness components into their program models also reported positive outcomes in this area. This was particularly evident in Adopter Schools that are implementing outdoor education pilot projects. For example, parents and caregivers of students at Katahdin, Camden-Rockport, and SU76 all reported that they have observed noticeable improvements in their children's attention, mood, and behavior throughout the course of the 2021–2022 school year. Teachers at Agnes Gray perceived that outdoor learning had a positive effect on students' ability to focus and concentrate, and that this effect was particularly pronounced on students with documented ACEs. Teachers at several schools, including Agnes Gray, SU76, and Camden-Rockport, reported greater engagement and fewer disruptive behaviors during both outdoor and indoor class time. Data from Mt. Blue showed that students are building emotional resilience as a result of the outdoor learning pilot project.

Innovative pilot models have enhanced student curiosity, confidence, and interest in learning for its own sake. Another pattern observed across all Adopter Schools was an increase in students' curiosity and interest in learning for the sake of learning. Stakeholders at all schools with an outdoor learning component, including teachers, administrators, and community partners, described students as more active, joyful, and engaged participants in learning during the 2021–2022 school year compared to previous years. For example, during focus groups, parents and caregivers of students at Katahdin reported that their children now have an increased or newfound interest in the outdoors and have recently begun to ask questions and express curiosity about things in nature. Katahdin teachers reinforced this finding and observed that some students have even begun playing a role in suggesting responsive outdoor learning activities. Schools with other educational models also reported growth in student curiosity and love of learning. For example, St. George teachers and administrators said students who engage in the CTE/Makerspace activities take pride in their work and demonstrate excitement about creating something tangible; specifically, teachers believe that ongoing CTE opportunities are helping students "find their path" in school. Similarly, students who engaged in internships as part of the community-based learning program at HCA reported that these experiences enabled them to think about their future career goals. At Brewer, students and parents described how the program model, especially the individualized support for online learning, gave them the confidence to pursue courses they otherwise might have felt were too challenging to take. Similarly, students and parents at Noble drew connections between the supportive, wellness-infused school culture and student willingness to pursue their interests and feel comfortable sharing their intellectual pursuits with their peers.

Teachers reported increased confidence in and capacity for designing and implementing responsive education activities. Besides student outcomes, most Adopter Schools identified teacher confidence and openness to innovation as a key short-term or long-term outcome in their program logic models. By and large, teachers and school staff built their capacity throughout the 2021–2022 school year in designing and implementing pilot model activities through workshops, coaching, peer-to-peer exchanges, and other forms of structured support made available through RREV resources. For example, Brewer staff described increased knowledge and capacity in supporting students with virtual learning through proactive communication and relationship-building with students. Noble teachers described growing their confidence in bridging the connection between student wellness and academic growth in students. Teachers at Camden-Rockport and SU76 reported a steady increase in their confidence in engaging in outdoor learning activities. Finally, teachers at St. George shared that the school's current CTE initiatives have encouraged them to be creative in their lesson planning to engage their students in more CTE opportunities.

Innovative pilot models have contributed to a shift in overall school culture. Several Adopter Schools attributed educational paradigm shifts in terms of how students, parents, teachers, and administrators think about school, learning, and education more broadly to the pilot model. For example, teachers at Agnes Gray said pilot activities—such as professional development around outdoor facilitation skills, building systems to smoothly transition classrooms to outdoor learning, and developing an outdoor learning curriculum bank—contributed to a broader cultural shift in which outdoor education is integrated into the school's culture. Similarly, school administrators at Camden-Rockport credited the pilot with jumpstarting a strategic shift in their long-term educational strategy toward more outdoor education in particular and innovation in general. Finally, students, parents, teachers, and administrators at Noble all emphasized the integral role the *Be Well Connected* program has played in establishing a unique culture in its first year. In particular, these stakeholders described an intentional effort to foster a culture of inclusion where students empathize with and support each other, academically and socially.

Third-grade Camden students learn about forces and motion through a kite-flying activity at Tanglewood.

Research Question 6: To what extent were students and families satisfied with the responsive education opportunities offered through RREV?

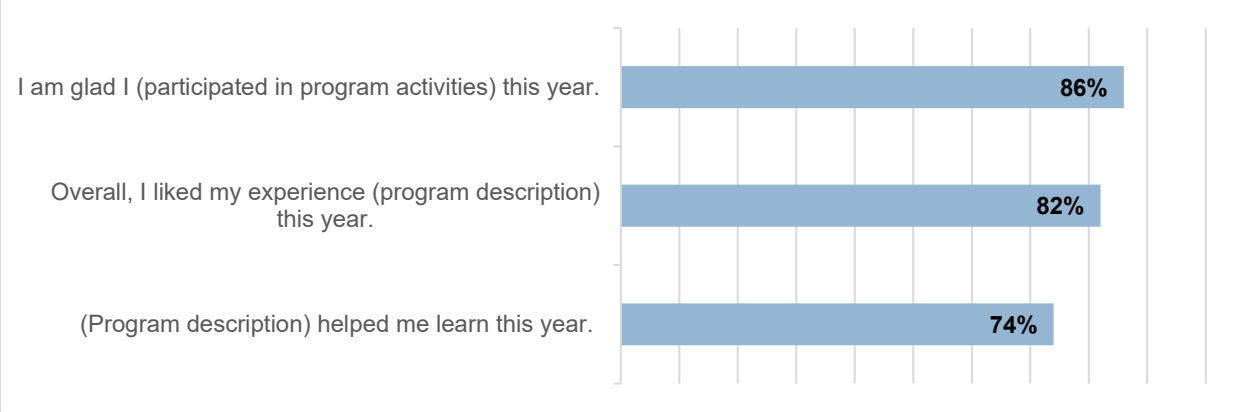
Responsive educational opportunities are important to parents. ICF fielded a survey to parents and caregivers of students directly involved in a RREV-funded pilot. When asked how important it was that schools offer responsive educational activities, all parents (n=202) answered that such opportunities were at least moderately important to them, including 88 percent who said it was "very important." When asked to compare the availability of responsive educational activities in 2021–2022 to the previous year, 70 percent of parents felt like there was more opportunity for responsive educational activities than before the pilot began (19 percent felt it was about the same as the previous year), and 84 percent were satisfied with their school's options.

The vast majority of parents were satisfied with their school's pilot and credited it with helping their children learn. The family survey asked parents whether they were aware that their child's school had a RREV-funded program, and, if so, to rate their satisfaction with their child's experience. More than three-quarters of parents (78 percent) were aware their school was implementing a RREV-funded program, and of these (n=164), 93 percent said they were satisfied with their child's experience and 99 percent said they would recommend the program to other parents. Almost all parents also somewhat or strongly agreed their child enjoyed participating in the pilot program (93 percent) and learned a lot from doing so (92 percent).

Almost all students were happy with their experience in a RREV pilot. ICF administered a short survey to all students above grade 3 who were directly involved in a pilot program during the 2021–2022 school year. Overall (n=335), 86 percent said they were glad they participated, 82 percent said they liked their experience in the pilot program, and 74 percent said the pilot

helped them learn. Almost three-quarters (72 percent) felt like they had more opportunities to learn outside a traditional classroom than in the past (Exhibit 9).

EXHIBIT 9. RESULTS FROM STUDENT SURVEY



Research Question 7: What lessons can be learned that would be helpful to future schools adopting innovative models?

Ongoing professional development, coaching, and other forms of structured support are critical for building teacher capacity and confidence for designing and implementing innovative education ventures. This was particularly true of Adopter Schools implementing outdoor education projects. For example, Katahdin teachers shared that the ongoing professional development and one-on-one engagements with consultants provided them with the support needed to boost confidence for developing curricular units and implementing innovative instructional methods outdoors. Similarly, teachers at SU76 and Camden-Rockport both reported the logistical and pedagogical challenges associated with outdoor learning were largely mitigated by ongoing training and coaching opportunities that were made available throughout the school year.

Schools should be thoughtful in recruitment and hiring of full-time staff positions. As noted previously, several Adopter Schools allocated a substantial portion of their RREV grant funds to new full-time staff positions to manage specialized and varied responsibilities. These staff played an integral role in the implementation of the innovative pilot models. Adopter Schools stressed the importance of taking special care in recruiting for these positions to ensure that the right candidates fill these roles. For example, Brewer administrators observed that the role of the Remote Learning Specialist needs to be an individual with a diverse skillset, including teaching, administrative, and interpersonal skills. Noble had planned to hire a Virtual Wellness Counselor to support learning coaches and guidance counselors throughout the first year of the pilot project but decided to use the first year of the project to better understand the needs of students and what requirements they should seek in a Virtual Wellness Counselor for the 2022–2023 school year. Taking this time to pause and reflect yielded important insights on the necessary qualifications for this position, such as having a background in social work and mental health. Insights from SU76 shed light on the importance of hiring locally to ensure that the Director of Place-Based Education was familiar with the culture and lived experiences of students.

Engaging teachers in development and initial implementation can support buy-in and long-term success. While school staff characterized pilot projects as creative, inspiring, and promising, they also emphasized that development and implementation of these models is time-consuming work that demands a level of commitment, energy, and perseverance from all school staff involved. Maintaining long-term buy-in from school staff is critical for sustaining these innovative pilot models. Some Adopter Schools shared how they were able to secure this buy-in during the first year of the pilot. At SU76, the Director of Place-Based Learning built staff buy-in throughout the course of the school year by involving teaching staff in the planning and development of community partnerships, which elevated teachers' voices in the implementation process. The Director of Place-Based Learning also focused her efforts of identifying teachers who already had an interest in place-based learning and cultivating a mentoring relationship with them, so that they, in turn, could develop learning models for other teachers to follow. A school administrator at Camden-Rockport shared the importance of structuring the pilot project as an effort that would "meet teachers where they're at," as opposed to a top-down directive from school administration.

Innovative models that target a limited number of grades should consider how participating students will transition to more traditional schooling when they reach grade levels not served by the model. A few Adopter Schools expressed concern as to how students would fare academically, emotionally, cognitively, and physically as they transitioned out of the innovative pilot project. For example, Camden-Rockport's nature-based PreK program is the first public school PreK program in Maine to be facilitated completely outdoors. One concern that the PreK instructor raised was how PreK students this year would fare as they transition to kindergarten (which is *not* facilitated completely outdoors) the following school year. Likewise, Noble's *Be Well Connected* program targets students in grades 5–8, but they are still exploring a strategy for transitioning students out of the virtual middle school to traditional high school programming. This issue has made clear the need to consider a transition plan for students who are leaving a school with an innovative education venture to attend a school that utilizes more traditional educational programming.

Chapter 3: Educator Attitudes Toward Innovation in Education

Background

RREV seeks to create systemic change in Maine schools that extends beyond the immediate financial support provided by the award. A key mechanism for this long-lasting impact lies in teacher attitudes toward innovation. According to RREV's theory of change, teachers and administrators who participate in a pilot will experience first-hand the benefits of innovation, and thus become more supportive and effective at implementing innovative education models in the future. RREV posits that over time, positive attitudes toward innovation among Maine educators will cultivate an environment where administrators and teachers continuously create and implement new educational models that respond to changing student needs.

Research questions

This chapter is focused on attitudes toward innovation among educators at Adopter Schools and their satisfaction with the support they received to implement their educational models. This chapter addresses the following research questions:

1. What attitudes do educators at Adopter Schools have toward innovation in education, and to what extent and how did these change during implementation of an innovative education model?
2. To what extent were educators satisfied with the professional development and other resources to support the implementation of their pilot model?

Methods

ICF and MDOE collaborated to design a pre- and post-survey aligned with RREV's philosophy of innovation, especially the design thinking principles taught in IMPD courses. Specifically, this survey includes 20 items about educators' attitudes and experience around innovation along five domains:

1. Openness to new approaches;
2. Flexibility and iteration;
3. Collaboration;
4. Self-reflection; and
5. Perception of leadership support for innovation.

These survey items were posed as statements with which the respondents were asked to rate their agreement on a five-point Likert scale ("strongly disagree," "disagree," "neutral," "agree," and "strongly agree").

For most items, agreement with the statement indicated a positive attitude toward innovation, such that an increase in the proportion who agreed signals an improved attitude toward

A fort constructed by Agnes Gray students during free time and recess.

innovation. However, as a way to encourage respondents to really think through their answers, ICF also included some statements where *disagreement* signals positive attitude toward

innovation, such that an increase in the proportion who disagreed signals an improved attitude toward innovation.

Two specific questions relating to teacher lesson plans were only asked of the respondents who indicated they were teachers, but were not asked of educators who identified as administrators. The post-survey also included questions related to educators' satisfaction with support they received to implement their pilot model as well as open-ended questions about their overall experience during the first year of implementation.

At the beginning of the 2021–2022 school year, the primary point of contact for each Adopter School provided ICF with the names and email addresses for all administrators and teachers who were directly involved in the pilot model. Given the diverse nature of these models, the number of educators identified by their school's leaders as directly involved varied from 2 at St. George to 87 at SU76, where all school staff received the survey. In November 2021, ICF distributed the pre- and post-survey to 165 educators across all 9 schools.

Exhibit 10 summarizes the number of surveys received and the response rate on pre- and post-surveys statewide and by Adopter School. Overall, ICF received 82 pre-surveys (50 percent

response rate) and 78 post-surveys (47 percent response rate), of which 53 were matched pairs. When comparing changes from fall to spring, ICF only included respondents who took both surveys so that changes reflect the same respondents. ICF included all post-surveys in our analysis of satisfaction and other items that only appeared on the post-survey.

Due to the small number of survey recipients at some schools, ICF does not provide school-level analysis of educator survey data; however, the individual case studies provide deep dives into the culture and effects of the pilot at each school.

EXHIBIT 10. NUMBER OF PARTICIPANTS BY ADOPTER SCHOOL

Adopter School	Total Staff Involved in Pilot	Pre-Survey Respondents (Response Rate)	Post-Survey Responses (Response Rate)	Total # of Matched Pairs[6]
Brewer Public School	10	10 (100%)	9 (90%)	4
Harpswell Coastal Academy	8	5 (63%)	3 (38%)	2
MSAD #17 Agnes Gray Elementary School	3	3 (100%)	2 (67%)	2
MSAD #28 Camden	33	19 (58%)	22 (67%)	15
RSU #60 Noble	3	3 (100%)	3 (100%)	3
RSU #89 Katahdin	14	8 (57%)	8 (57%)	7
RSU #9 Mt. Blue	5	4 (80%)	5 (100%)	3
School Union #76	87	30 (34%)	25 (29%)	16
St. George Public Schools	2	1 (50%)	1 (50%)	1
TOTAL	**165**	**82 (50%)**	**78 (47%)**	**53**

Research Question 1: What attitudes do educators at Adopter Schools have toward innovation in education, and to what extent and how did these change during implementation of an innovative education model?

Educators at Adopter Schools exhibited positive attitudes toward innovation throughout the year and demonstrated improved or equivalent attitudes toward innovation on 15 out of 20 items. The majority of teachers, administrators, and other staff—regardless of their level of experience—generally agreed with principles of innovation and stated that they sought to integrate innovative approaches in their professional practices. Even on items where change was not in the expected direction, there was an overall positive orientation toward innovation across all five domains of innovative attitudes examined by the survey:

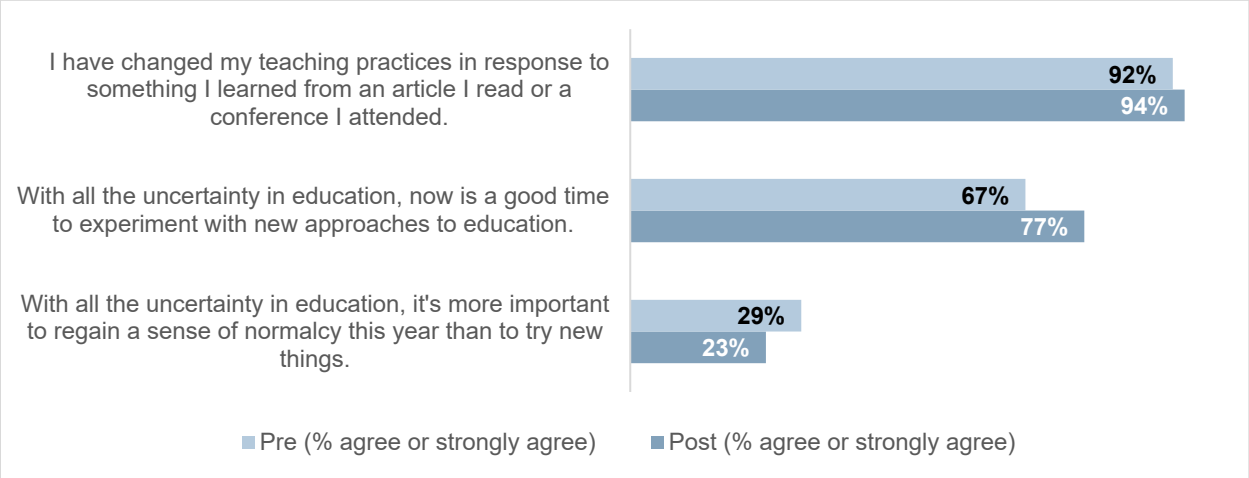
[6] Some post-surveys could not be matched to pre-surveys. This occurred when a teacher was hired after the pre-survey was administered or when an educator responded to a forwarded link to the survey instead of the unique link sent directly to them. In these cases, the post-surveys are included in post-only questions, but only matched pairs were analyzed for changes from the beginning to end of the school year.

1. Openness to new approaches;
2. Flexibility and iteration;
3. Collaboration;
4. Self-reflection; and
5. Perception of leadership support for innovation.

Openness to new approaches

Educators exhibited high willingness to try new approaches to education, and this openness to trying new things increased over the course of the year. In order to gauge educators' openness to new approaches, the survey primed respondents to think about all the uncertainty in education coming out of the pandemic, and asked whether they thought this context would be conducive to trying new approaches or returning back to "normal." Overall, most educators on both the pre- and post-survey agreed that this uncertainty was an opportunity to try new approaches, but importantly, the proportion who agreed with this perspective increased from 67 percent in the fall to 77 percent in the spring. Conversely, the proportion who prioritized returning to "normal" decreased from 29 percent to 23 percent.

EXHIBIT 11. PERCENTAGE OF PARTICIPANTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO THEIR OPENNESS TO NEW APPROACHES[7]



Qualitative data from open-ended survey questions offer additional context to these findings. When asked how their experience with their school's pilot model influenced their approach to teaching, many teachers mentioned the way their experience increased their desire to try new approaches. For example, one educator wrote that their experience this year gave them "courage to remain open to new ideas." This finding was also evident during the site visits. For example, one teacher at SU76 said even some staff who are usually "stuck in their ways [were] extremely excited" about the new program because of its relevance to their students. Their attitudes, which were reflected at other Adopter Schools, suggest that RREV's emphasis on

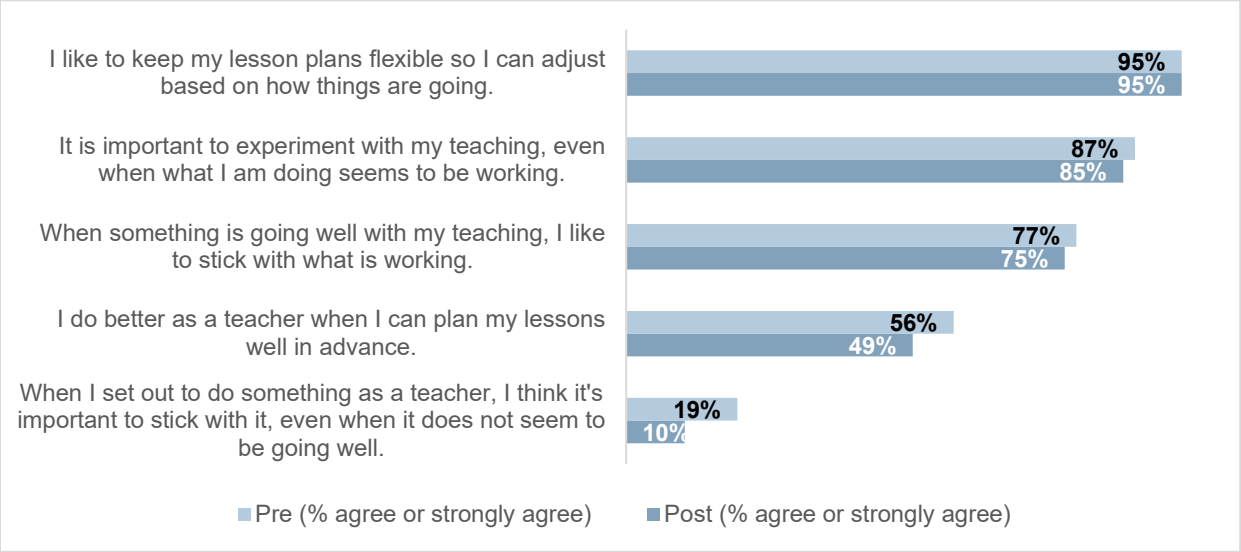
[7] All exhibits in this report show the statement wordings used on the teacher version of the survey. Administrators and other staff were shown versions of the same questions, but where teachers were asked about "my teaching" others were asked about "my job" or "my professional practices."

responsiveness to student needs could accentuate teachers' openness to try new things during an uncertain time

Flexibility and iteration

Educators showed some increase in flexibility over the course of the year, but already had high levels of flexibility before they implemented their pilot models**.** There was no substantive change over the course of the year on three of five items related to educators' flexibility in the classroom. However, two items showed more substantive change indicative of more openness to innovation, including the proportion of teachers who agreed that it is important to stick with strategies, even when they do not seem to be going well. On this item, 19 percent of educators on the pre-survey agreed it was important to "stick with it," whereas only 10 percent said the same on the post-survey. There was also a decrease in the proportion of educators who said they do better when they can plan their lessons well in advance.

EXHIBIT 12. PERCENTAGE OF PARTICIPANTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO FLEXIBILITY AND ITERATION

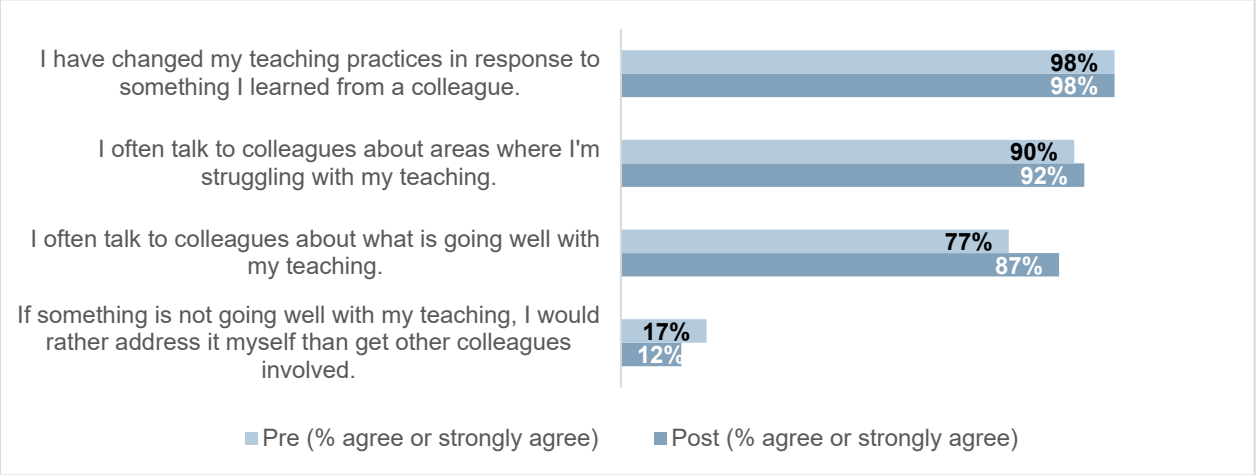


Qualitative data collected during the site visits reinforced the value of flexibility during pilot implementation. For example, the pilot team at Mt. Blue described some changes to program design that were implemented after changes in district leadership, including the decision to change the *Oxbow Outdoor Pilot* course from a year-long to a semester-long course. In this case, the pilot team showed flexibility in condensing coursework and focused on building teacher-student relationships more quickly. Several of the schools implementing outdoor education also described examples of educator flexibility, especially in response to opportunities and challenges presented by changing weather or other outdoor conditions.

Collaboration

Overall, respondents overwhelmingly agree that collaboration plays an active role in their educational practice (Exhibit 13). More educators described speaking with their colleagues when they are struggling than when something is going well, but the latter showed the greatest positive change between the pre- and post-survey.

EXHIBIT 13. PERCENTAGE OF PARTICIPANTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO COLLABORATION

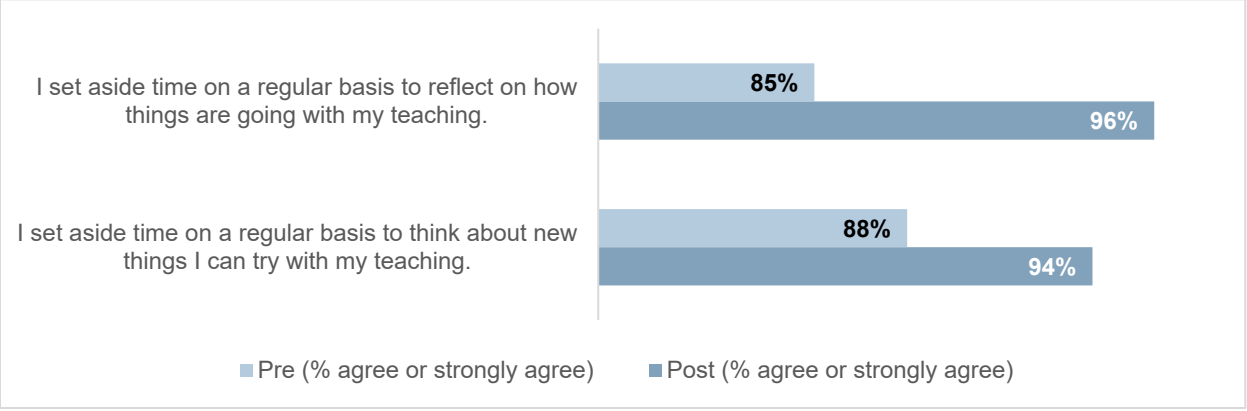


When offered an open-ended opportunity to describe the most valuable part of the RREV program, several teachers described the opportunity to work more closely with their colleagues on a shared mission. For example, one teacher wrote that "RREV helped teachers come together as a team" to try something new, which increased their confidence that public education can be more exciting, innovative, and collaborative. The case studies in Appendix A also offer illustrative examples of how implementing a pilot model supported collaboration. For example, the staff at Noble described how their shared experience implementing a new educational model helped them grow closer as colleagues.

Self-reflection

Most educators set aside time for self-reflection, and the proportion who did so increased from the fall to the spring**.** Across all 20 items on the pre- and post-survey, the greatest positive change was on the item about self-reflection. On the pre-survey, 85 percent of educators said they regularly set aside time to reflect on their teaching, and in the spring almost all teachers (96 percent) said they do so. When asked specifically about building in time to think about new approaches, again there was an increase from fall to spring, such that almost all educators agreed this is something they do.

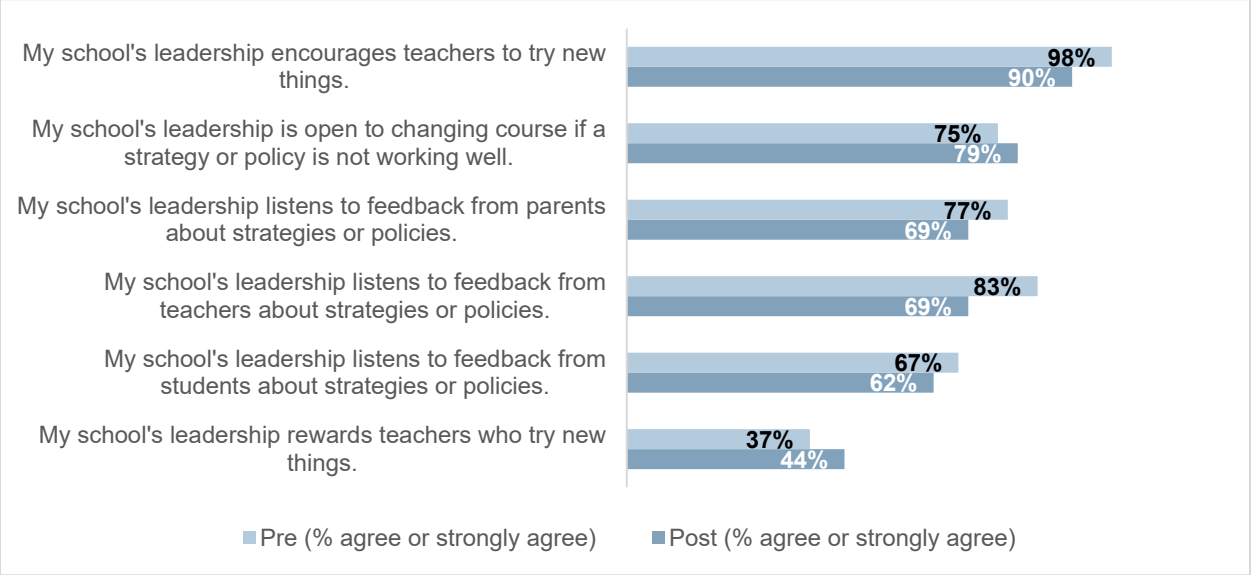
EXHIBIT 14. PERCENTAGE OF PARTICIPANTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO REFLECTION



Leadership support for innovation

Educators described mixed perceptions of school leaders' support for innovation**.** On most items, a majority of educators agreed that school leaders support innovation, but several items showed a decrease from spring to fall. For example, the proportion of teachers who agreed that their leaders listen to feedback from teachers about strategies or policies decreased from 83 percent in the fall to 69 percent in the spring. There were also decreases in perceptions that leaders listen to parents or students. Another interesting and mixed finding was educator perceptions about how leadership responds to teachers' ideas for new approaches. On the one hand, almost all educators on the pre- and post-surveys agreed that their school leaders *encourage* teachers to try new things, yet less than half said leaders *reward* teachers who try new things.

EXHIBIT 15. PERCENTAGE OF PARTICIPANTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO SCHOOL LEADERSHIP SUPPORT FOR INNOVATION



As described in the case studies, teachers at many Adopter Schools described strong support from leadership for their pilot as well as other innovative approaches. For example, Brewer staff emphasized the high degree of support they received from their superintendent. However, other schools experienced leadership turnover that may have led some teachers to perceive less support for innovation in the spring than the fall.

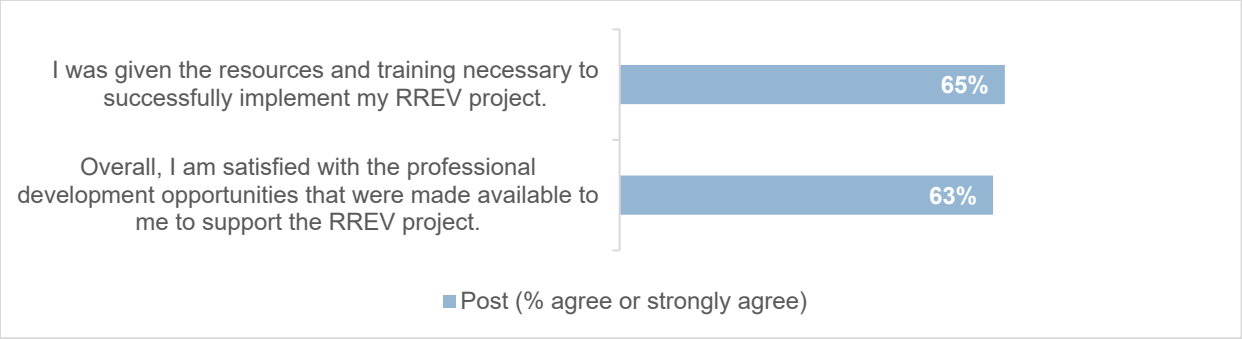
Research Question 2: To what extent were educators satisfied with the professional development and other resources to support the implementation of their pilot model?

Resources for implementing pilot model

Most educators felt they had sufficient resources to implement their pilot model, but there was a sizable minority who did not believe they were well enough supported. Overall, the majority of respondents indicated that they received sufficient resources and professional development to implement their RREV project (Exhibit 16). However, a substantial minority of educators did not

feel like they had adequate support. Feedback from teachers who were not satisfied with their support was provided in response to the open-ended question "What, if anything, would you change about your experience with the RREV program?" Specifically, several educators said that they needed more time among other day-to-day responsibilities for planning and implementation of the RREV program. Other teachers suggested more subject-specific training and examples of activities they could use with students, especially related to outdoor education. A few teachers also commented on leadership turnover in their district, which they felt diminished the amount of support they received.

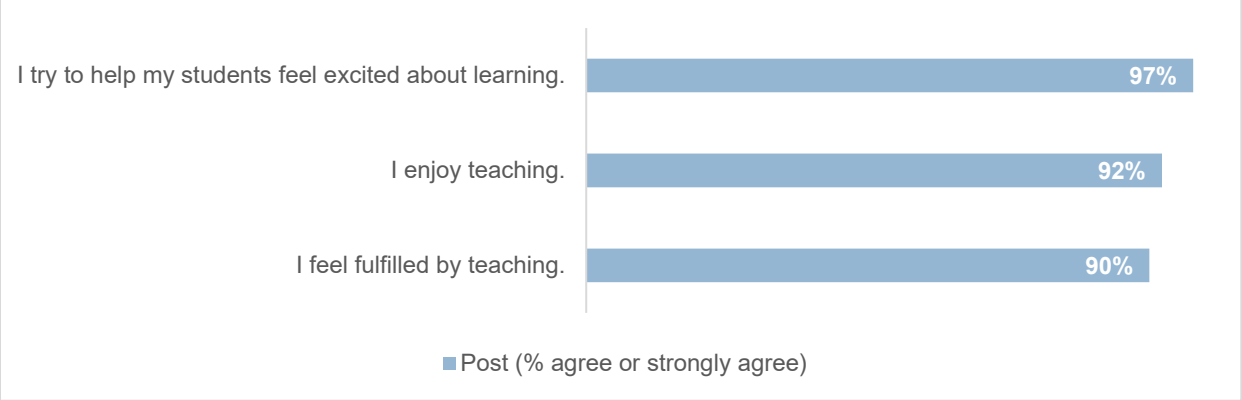
EXHIBIT 16. PERCENTAGE OF RESPONDENTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO RESOURCES AND TRAINING



Teacher engagement

Almost all teachers involved in a RREV pilot exhibited signs of strong engagement, but it is too soon to measure change during the implementation of a pilot model**.** The pre-survey did not include any questions about teacher engagement, but during the course of the year, MDOE and ICF hypothesized that implementing an innovative education model would contribute to teacher engagement. Findings show that nearly all teachers try to help their students feel excited about learning (97 percent), enjoy teaching (92 percent), and feel fulfilled in their vocation (90 percent). Going forward, these items will be included on pre- and post-surveys to measure changes in teacher engagement over time as schools implement a pilot model.

EXHIBIT 17. PERCENTAGE OF PARTICIPANTS WHO "AGREE" OR "STRONGLY AGREE" WITH STATEMENTS RELATING TO TEACHER ENGAGEMENT



Appendix A: Adopter School Case Studies

Individual Adopter School – Katahdin: Year 1 Case Study

Regional School Unit #89, Region 1 – Aroostook

Background

Katahdin Schools, regional school unit #89 (RSU #89), is a rural school administrative unit (SAU) in Northern Penobscot County, about 80 miles north of Bangor. Katahdin Schools ("Katahdin") serve approximately 275 students between the Katahdin Elementary School and the Katahdin Middle/High School. Administrative leadership described the location of the schools as "beyond rural." Data from the National Center for Education Statistics (NCES) identifies over half of students (61 percent) as economically disadvantaged, which is higher than the state's percentage. However, NCES reports a slightly lower percentage of students with disabilities at Katahdin (Exhibit 1).[1]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	271	178,860
Locale Classification	Rural	N/A
Students Identified as White	95%	88%
Students Identified as Economically Disadvantaged	61%	41%
Students Eligible For Free/Reduced Price Lunch (Katahdin Elementary)	64%	44%
Students Identified with Disabilities	16%	18%
Student/Teacher Ratio	11.19	N/A
Median Household Income	$36,607	$57,918
Adults with a Bachelor's Degree or Higher	15.1%	32%
Adults in Labor Force	47%	63%

Sources: Maine Department of Education, National Center for Education Statistics, U.S. Census Bureau & WalletHub

Development of pilot project[2]

Since 2018, Katahdin has partnered with a local nonprofit organization to develop responsive professional development and place-based and outdoor learning strategies. From 2018 to 2020, Katahdin leadership began allocating resources for outdoor learning efforts as a way to support

[1] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018-2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019-2020 school year. Median Household Income for the SAU was taken from a WalletHub article: "Most & Least Equitable School Districts in Maine."

[2] Information related to the development of the pilot project came from Katahdin's RREV application and interviews with school leadership.

the health, well-being, and performance of students and staff. Katahdin's interest in outdoor learning laid the groundwork for the school's innovative activities.

Katahdin leadership and staff learned about the Rethinking Responsive Education Ventures (RREV) award and the Innovative Mindset Pilot Development (IMPD) course through the Maine Department of Education newsletter. They were prompted to participate in the IMPD course to not only sustain their interest in outdoor education efforts, but to also develop an outdoor learning pathway for students in PreK through 12th grade that incorporates social-emotional, physical, and cognitive development. Four individuals from Katahdin participated in the IMPD course, including the superintendent, a grant coordinator, an instructional coach, and an outdoor education teacher. School leadership said the course helped them clarify their thinking about connections between outdoor learning and students' social-emotional, physical, and cognitive development needs. Additionally, the course helped Katahdin leaders and staff identify the need for professional and curriculum development in outdoor learning. In one interview, a Katahdin leader noted the award has "given us the confidence and motivation to keep going and provid[ed] us with opportunities that we would not have had before RREV."

Program description

In August 2021, Katahdin received a RREV award ($250,000) to develop their *Connect, Reach & Teach Each Child with Outdoor Learning* model for PreK–12 students. The goals of the model are to improve students' overall well-being and happiness at school, while also meeting the professional learning needs of their educators.

At the elementary level, the model is focused on the development of curricular units that integrate outdoor learning into education and the professional development of teachers to support the creation of these integrated units. Katahdin is using RREV funding to engage consultants who are experts in outdoor learning and incorporating evidence-based, high-impact teaching strategies. These consultants work with teachers to develop and integrate outdoor, physical, and social emotional learning into their curricula. Teachers are provided with additional materials such as teaching strategy books. Providing this type of professional development would have been difficult without the RREV funding.

Katahdin leadership shared that they would focus on developing outdoor-themed courses, programs, internships, and apprenticeships that students may take as electives at the middle and high school. To date, RREV funding has not been used to implement programming at the middle and high school. According to Katahdin leadership, program components at the high school will begin implementation during the 2022–2023 school year.

Katahdin's pilot also includes the development of outdoor learning spaces at the elementary school, including the construction of trails and learning spaces and the procurement of outdoor equipment and gear, such as tents for outdoor education.

EXHIBIT 2. PROJECT LOGIC MODEL[10]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ and coaching Natural resources, including forests and streams near the school A growing literature on outdoor learning	Engage consultants with expertise in outdoor learning to provide professional development to teachers focused on outdoor learning Develop outdoor-themed courses, programs, internships, and apprenticeships Teachers implement outdoor learning activities across grade levels and subjects Develop and maintain infrastructure, including nature trails, outdoor learning spaces, and a gear storage facility	Number of teachers who participate in professional development activities on outdoor learning Number of outdoor learning professional development activities Amount of time students learn outdoors Outdoor lesson plans and activities developed Outdoor infrastructure completed	Improved teacher knowledge of outdoor learning principles Improved teacher attitudes toward outdoor learning Students demonstrate academic growth Students demonstrate socio-emotional growth Students demonstrate greater awareness of and interest in careers involving the outdoors	Teachers incorporate outdoor learning in their teaching practices Improved graduation rates Increased number of students who pursue careers involving the outdoors Outdoor infrastructure is integrated into Katahdin's learning space	Greater appreciation for the outdoors among students and teachers in Katahdin Teachers and families at Katahdin Schools embrace innovative thinking that underlies outdoor education

[10] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

Katahdin's pilot at the elementary school is innovative for two main reasons:

1. **Its whole-child approach supports students' emotional, cognitive, and physical development**. Katahdin administrators describe their learning model as following a whole-child approach. In one interview, an administrator explained this approach provides "support to the whole child, meaning that we are expanding from the traditional cognitive focus to also incorporate social-emotional and physical development." Katahdin educators expect that integrating all these components will improve students' mental and physical health, and, ultimately, their overall well-being.

2. **It integrates outdoor learning across all grades (PreK–5), with an emphasis on science**. Another innovative aspect is the emphasis on integrating outdoor learning strategies throughout students' educational journeys. One of Katahdin's consultants explained that "every classroom has an outdoor space that's being designed to really work for the curriculum, that age group; and the kids seem to be really invested." This commitment is also evidenced by the integration of outdoor learning strategies across multiple areas, such as science, art, music, and physical education.

INNOVATIONS

- Whole-child approach expands beyond cognitive to social-emotional and physical
- Outdoor learning is woven into all PreK–5 grades and multiple subjects

Implementation of learning model[11]

In the first year since receiving the RREV award, programming has focused mainly on Katahdin Elementary School. The sections below describe current progress and perceptions of different program elements at the elementary schools, as well as the Middle/High School.

Outdoor learning at the elementary school

According to leadership, the emphasis during the 2021–2022 school year has been on increasing the overall number of opportunities students have for outdoor learning. For example, students are provided opportunities to participate in outdoor learning for music, library, physical education, and/or guidance, in addition to the classroom teachers integrating it into the core curriculum.

Curriculum and professional development

Professional development for elementary school staff started with a 2-day "summer institute" in August 2021. Following this event, teachers have attended professional development activities about once per month throughout the fall and winter of the 2021–2022 school year. During the spring, the outdoor learning and curriculum consultants who have been providing professional

[11] Updates about the implementation of the model were captured through interviews (phone and in-person) with the school administrator, RREV grant coordinator, Katahdin teachers, and parents.

Katahdin's RREV award supports infrastructure for outdoor learning.

development engaged in observations of teachers who have incorporated outdoor learning into their classroom. During a focus group, elementary school teachers shared that these observation and feedback sessions with the consultants encouraged and motivated them to continue implementing outdoor learning activities. One teacher said,

> *"That's the moment [after the consultant's feedback] where I felt like, okay, I feel like I really have this and I can do this because she validated what we were doing was amazing and awesome. But also pushed us to now take that same atmosphere and that same content and do it with a different skill."*

The restorative practice coordinator and instructional coach also reported shadowing these observations led by the consultants.

Implementation of the model by classroom teachers

During the 2021–2022 school year, Katahdin leadership shared that many of the teachers at Katahdin Elementary School integrated outdoor learning activities; however, they also reported that their teachers are still in the "experimental phase" and they do not require them to teach a specific number of hours outdoors. One leadership member explained, "It's not so much that every teacher needs to spend X number of minutes outside. It's more like, what does the student day look like and how much time is being spent outside?" Overall, teachers who participated in the focus groups reported engaging their students in outdoor learning, including lessons on local trees, vernal pools, and animals/insects, as well as using materials out in nature, such as sticks and rocks, to learn multiplication.

Engagement of school educators in outdoor learning

In addition to the curriculum and professional development activities, other school educators (who are not classroom teachers) at the elementary school have begun implementing these outdoor learning strategies into their educational practices:

- **The instructional coach assists teachers in facilitating their outdoor learning activities.** During the fall, she co-facilitated group lessons with teachers and provided a range of planning and implementation support. In January 2022, due to a teacher shortage, she had to shift into a teaching position that limited her ability to support all elementary teachers with outdoor learning implementation. The instructional coach reported that during the 2022–2023 school year, she intends to continue encouraging teachers with their lesson planning and outdoor learning activities by modeling lessons and offering to go outside with them and their students.
- **The guidance counselor incorporates outdoor learning into her weekly meetings with elementary school students.** During these sessions, students learn about social-emotional development through activities that make connections between nature and individuals' feelings and senses. Students also participate in collaborative activities (e.g., making small animal shelters) that encourage teamwork and foster connections between students and their peers. The guidance counselor also supports teachers by integrating aspects of their curriculum into her own outdoor learning activities with students. In the spring, the guidance counselor reported that she has updated her guidance scope and sequence based on her interactions with the professional development consultants. The guidance counselor also anticipates furthering her outdoor learning implementation during the 2022–2023 school year and shared that she even changed the name of her class from "Guidance" to "Nature Connection."
- **The school's restorative practices coordinator, who meets with students daily, has been working to incorporate outdoor learning into her restorative practices and social-emotional learning content.** A challenge encountered by the coordinator this year was her comfort level with bringing students outside by herself and/or requesting the support of classroom teachers. In the spring, the coordinator reported that she intends to increase her incorporation of outdoor learning and her encouragement of classroom teacher participation in her activities next school year.

Site development and maintenance[12]

To build capacity to support students' physical development with outdoor learning, Katahdin has used RREV funding to facilitate the construction of outdoor paths around the perimeter of the elementary school grounds and to develop designated "classroom" spaces along these paths. Katahdin leadership hopes these outdoor spaces will help encourage students and teachers to participate in physical outdoor learning activities.

Outdoor gear

Leadership at Katahdin Elementary School has used RREV funding to overcome climate-related challenges and provide necessary gear to elementary students so they can fully participate in

[12] Updates to site development and maintenance are also based on in-person site visits of the school grounds in April 2022.

outdoor learning activities. For example, Katahdin has created a "gear library" full of rain boots, pants, cold weather gear, and bug nets that elementary students and teachers can borrow.

Outdoor learning at the middle/high school

Uncertainty regarding allocation of RREV funding for implementation

Currently, RREV funding has not been used to implement programming at the middle/high school. Middle/high school teachers interviewed reported frustrations relating to the lack of RREV funding information available, with one teacher saying, "We're disconnected in the fact that we know we have a part of this [RREV award], we just don't know really what part of it that we actually have. Is it a percentage, is it a dollar amount? Are we really part of the whole?" The middle/high school teachers interviewed expressed wanting more details from Katahdin administration regarding how much funding will be allocated to their outdoor program. Katahdin leadership and administration shared that about 30 percent of RREV funding has been allocated for curriculum development and the procurement of gear at the middle/high school and they will work with the middle/high school during the 2022–2023 school year.

Curriculum/Course development

Prior to the RREV award, Katahdin Middle/High School had already begun implementing outdoor learning activities, including an outdoor education elective, which students can opt in to.[13] Additionally, teachers at the middle/high school reported using outdoor learning within their science curriculums. For instance, teachers noted that lessons outdoors have included collecting insects and learning about the impacts of weather/climate, erosions, atmospheric pressure, climate change, and local geology. As noted in the section above, Katahdin leadership has allocated funding for course development.

Outdoor gear

Teachers at Katahdin Middle/High School reported limited outdoor equipment for students. Existing equipment at this level has been procured through grants and fundraising efforts outside of the RREV award. The middle/high school teachers report a need for outdoor learning equipment, such as atlases, contour maps, fishing poles, and other gear for students and expressed the desire to use RREV funding for this purpose. As noted above, Katahdin administration mentioned during their interview that there will be some RREV funding available for the middle/high school to purchase gear.

Outcomes

Outcomes of the first year of the RREV implementation are based on survey results from 16 parents/caregivers of elementary school students and 37 4th- and 5th-grade students as well as interviews and focus groups with teachers, school administration, and parents/caregivers. Katahdin Middle/High School parents/caregivers and students were not surveyed.

Surveyed parents/caregivers in Katahdin report having access to the responsive educational activities they want. In a parent/caregiver survey (Exhibit 3), 100 percent of respondents felt it was "very important" or "moderately important" that schools offer responsive education activities, and 75 percent reported they were "very satisfied" or "somewhat satisfied" with such activities offered by Katahdin. Additionally, just over half (51 percent) of respondents

[13] This outdoor education elective has been available since 2017.

agreed that Katahdin offered more responsive educational activities in 2021–2022 than in the previous school year. All parents surveyed stated that they would recommend the outdoor learning program to other parents. When asked to explain why they would recommend this program, one parent shared that they feel like their kids learn better outdoors.

EXHIBIT 3. SUMMARY OF PARENT/CAREGIVER ELEMENTARY STUDENT SURVEY RESULTS (N=16)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 81%
	Moderately important – 19%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 56%
	Somewhat satisfied – 19%
	Neither satisfied nor dissatisfied – 6%
	Somewhat dissatisfied – 13%
	Very dissatisfied – 6%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 31%
	Slightly more opportunity – 25%
	About the same as last year – 44%
Would you recommend this program to other parents?	Yes – 100%

Parents/caregivers of elementary students participating in the focus group reported positive impacts of the outdoor learning program with their children. In spring 2022, we conducted a focus group of six Katahdin Elementary School parents and caregivers. When asked about the impacts the program has had on their children, several parents reported that their children have a new or increased interest in the outdoors. For example, parents reported that their children are more apt to direct outdoor activities on their own, often asking them questions about things in nature. A few parents also reported that they have noticeable improvements in attention, mood, and behavior.

Parents/caregivers of elementary students participating in the focus group reported a desire for greater awareness of the outdoor learning program. During the focus group, parents reported a range of awareness about outdoor learning at the elementary school, with some sharing that they have seen posts about the activities on the school website and social media pages, while others reported little knowledge of or communication about the program or RREV award. Only half of the parents in the focus group reported seeing the outdoor learning paths and classroom spaces in person. Most parents in the focus group expressed an overall desire for greater communication about the program and outdoor learning activities in which their children are involved. Moreover, several parents in the focus group suggested the program

could be improved through greater parental engagement, such as an increase in ways for parents to get involved (e.g., have a tour of the school grounds and gear library).

Surveyed students reported positive views about opportunities and experiences with outdoor learning. In Spring 2022, a survey was administered to 4th- and 5th-grade students at Katahdin Elementary School. Of the students who responded, nearly three-quarters (73 percent) reported that they were glad they went outside to learn this year, and about half (51 percent) reported that going outside helped them learn (Exhibit 4). Additionally, 73 percent of students who responded indicated that they liked their overall experience with the outdoor learning program this year. When asked about their favorite part of their outdoor learning experience, several students shared specific experiences, such as learning about trees and salmon, playing games, writing, and creating art. Other students shared that they simply enjoyed learning in a new space and being outside in nature. While most students surveyed said they would not change anything about the program, several students reported that they would like to go outside more often. A few students shared that they would like less time outside.

EXHIBIT 4. SUMMARY OF 4TH- & 5TH-GRADE STUDENT SURVEY RESULTS (N=37)

To what extent do you agree or disagree with the following statements	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I went outside to learn this year.	73%	19%	8%
Going outside helped me learn this year.	51%	22%	27%
Overall, I liked my experience going outside to learn this year.	73%	14%	14%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	54%	14%	33%

Katahdin elementary students demonstrated academic growth during the 2021–2022 school year. Among the 113 elementary students assessed during the 2021–2022 school year, 85 percent showed growth in literacy.[14] Additionally, over three-quarters (78 percent) of students assessed demonstrated academic growth in math.[15] [16] During focus groups with elementary teachers, several teachers reported seeing academic growth among their students over the year. One teacher credited this growth to being able to better meet the needs of their students through outdoor learning, sharing that "[the academic growth] never would've happened had we not been innovative and been supportive of those needs."

Elementary educators reported that a few students have played a role in suggesting and inspiring outdoor learning activities. During interviews in spring 2022, educators at the

[14] Growth in literacy is defined as achieving a higher NWEA Reading RIT score (for 2nd–5th-grade students) or higher DIBELS literacy raw score (for K–1 students) in spring 2022 compared to fall 2021.
[15] Growth in math is defined as achieving a higher NWEA Math RIT score (for 2nd–5th-grade students) or higher DIBELS math raw score (for K–1 students) in spring 2022 compared to fall 2021.
[16] Percentage of students demonstrating growth in math is out of a total of 90 students.

elementary school (who are not classroom teachers) reported that a few students have influenced some of the outdoor learning activities that have been implemented this school year. For instance, one educator reported that she had initially planned her lesson inside due to a writing activity. One of her students suggested that the writing activity could be completed outside with chalk, and the educator was able to shift to outdoor implementation. Another educator shared that while learning about beavers outside, students observed a nearby anthill. Inspired by their students' curiosity, this teacher created a new mini-unit for the students to learn about ants. This anthill later became a "sacred" and respected place among students and staff at the elementary school.

Elementary teachers participating in the focus group reported satisfaction with working at the school.[17] During focus groups, most teachers shared positive impacts of the outdoor learning program, and said they felt satisfaction working as a teacher at the school. For example, teachers shared that the program allows them to get exercise during the day, build better relationships with their students, and mitigate stress. A few teachers echoed the positive impacts of the program on the mental and emotional well-being of themselves and their students, with one of them, whose children also attend the school, sharing, "Being here with this team gives me a peace of mind because I know that they're getting fed [not just] academically but emotionally as well."

Future plans

Elementary school

Teachers and educators interviewed at the elementary school plan to continue incorporating outdoor learning activities into their classroom. According to Katahdin leadership, teachers at the elementary school will continue focusing on incorporating outdoor learning into their science curriculums. Additionally, and as noted previously, other educators at the elementary school, such as the guidance counselor, instructional coach, and restorative practices coordinator, expressed excitement for continuing to use the outdoor spaces and classrooms available at the school.

Middle/High school

Teachers at the middle/high school are currently working with a consultant to develop the curriculum mapping and sequencing for two outdoor learning electives available to 9th- and 10th-grade students that are set to begin during the 2022–2023 school year:

[17] During interviews with Katahdin school leadership, it was reported that there is buy-in of the model among most teachers. However, they also indicated that a few teachers (who tend to teach older students) do not completely buy in to the model.

Students draw connections between the classroom and what they learn outside.

- Outdoor Education 1: Students will have the opportunity to engage in outdoor learning and be certified in CPR, wilderness first aid, and hunter and trapping safety. Students will also engage in kayaking, canoeing, snowshoeing, skiing, and fishing.
- Outdoor Education 2: Teachers reported that this class will include a focus on jobs in outdoor education and incorporate guest speakers, such as local guide service workers, game wardens, frost rangers, and park rangers. Students will also engage in hiking and trip planning and will participate in an outdoor overnight stay.

According to Katahdin leadership, the RREV award will be used to pay for the consultant to provide feedback and accountability of the outdoor education curriculum during implementation.

Lessons learned

Consultants providing ongoing professional development to teachers is beneficial for boosting teacher confidence and maintaining motivation for the program. As elementary teachers engage in innovative instructional methods outdoors, a number of teachers expressed that the ongoing professional development provides them with the individualized support

needed to break new ground. During the focus group, one teacher shared their initial experience participating in this professional development:

> *"We all took what she [the consultant] was trying to say and she supported us in such a way that was like, 'It's fine if you want to go out once a week. It's fine if you want to go out for a half hour, try it—one thing—whatever you feel comfortable with.' . . . That's what I started with and I am like, they [the students] love being out here. Just the way that she supported us with small milestones. It's really great to hear that what we're doing is great. We're going in small, little chunks that worked for us."*

Other elementary teachers reported that the consultants engaged them one-on-one and provided individual support to teachers as they developed their curricular units. As noted previously, leadership at Katahdin reported that this type of professional development would not have been possible without RREV. This targeted professional development was implemented throughout the course of the 2021–2022 school year, and Katahdin leadership have reported that observations from the consultants will continue during the 2022–2023 school year.

Providing a strong foundation in outdoor education may provide students with local career opportunities. During interviews and focus groups with elementary school leadership, middle/high school teachers, and elementary school parents/caregivers, members of the school community expressed the importance of outdoor education and its ability to open up opportunities for youth in the area. For example, one of the focus group parents shared his experience and perspective as a local forester:

> *"I am a forester and you can't find foresters around here right now. . . . And there's a lot of opportunity here . . . there's just so many things going on that I think that our children can stay right here and have really good, paying jobs. This learning program that they're doing it really opens a lot of doors."*

Katahdin leadership reported that incorporating outdoor learning into PreK–5 lessons provides students with a solid foundation for future outdoor education pathways, such as the outdoor education electives in development at the middle/high school and their inclusion of outdoor education-related career exploration. This inclusion of outdoor learning throughout students' academic journey may help bring awareness to career opportunities in the community that students may not have previously thought were feasible.

Teachers could benefit from professional development with grade-specific guidance on outdoor education. Katahdin elementary leadership shared that some teachers, particularly those who teach students in grades 3–5, can be hesitant to bring their students outside. Additionally, during a teacher focus group, teachers explained that the concepts taught in the lower grades, such as letter and number identification, counting, and cardinality, are easier for teachers to incorporate with outdoor learning compared to concepts taught in the upper grades, such as long division and multiplication. These findings suggest that teachers could benefit from professional development that is specifically targeted toward students' developmental level.

Teacher input on infrastructure plans, especially the location of outdoor learning facilities, can help maximize their use. Leadership and administration noted that some

teachers felt that the designated outdoor classroom spaces are too far away from the school building. Consequently, teachers may be less likely to use these spaces as frequently. In response, Katahdin leadership is exploring strategies to get teacher input on the location of outdoor learning spaces so they are more accessible.

Individual Adopter School – Brewer: Year 1 Case Study

Brewer Public Schools, Region 2 – Penquis

Background

Brewer Public Schools ("Brewer") is a suburban school administrative unit (SAU) in the Bangor metropolitan area that serves approximately 1,400 students across 2 schools: Brewer Community School (grades PreK–8) and Brewer High School (grades 9–12). Brewer administrators characterized the community as "working class," which aligns with socioeconomic data from the National Center for Education Statistics (NCES). The school district's median annual household income ($52,174) is slightly less than the Maine average, while the proportions of students who are economically disadvantaged and eligible for free/reduced price lunch are slightly lower than the state average (Exhibit 1).[18]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	1,355	178,860
Locale Classification	Suburb	N/A
Students Identified as White	87%	88%
Students Identified as Economically Disadvantaged	37%	41%
Students Eligible For Free/Reduced Price Lunch	38% (PreK-8) 33% (9-12)	44%
Students Identified with Disabilities	22%	18%
Student/Teacher Ratio	N/A	N/A
Median Household Income	$52,174	$57,918
Adults with a Bachelor's Degree or Higher	40%	32%
Adults in Labor Force	94%	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

In August 2021, Brewer received a Rethinking Responsive Education Ventures (RREV) award ($249,892) to develop and implement its beginning in the 2021–2022 school year, which provides remote learning pathways for students. This educational model was initially developed by a pilot team of two—the director of instruction and technology and an 8th grade science teacher—during the Winter 2020 Innovative Mindset Pilot Development (IMPD) course. The team explained they did not have a preconceived idea about what type of educational program

[18] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018-2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019-2020 school year. The SAU does not report student to teacher ratio data.

they would develop when they entered the IMPD course, but they "truly went through that innovation process [to analyze] what are the needs [in our district] and what do we need to do to address them." One member of the pilot team commented, "We had so many ideas . . . [and] where we ended up was truly an evolution" from their initial interest in remote learning. Both members of the pilot team credited the IMPD course with sharpening their thinking, especially because the instructor and their peers asked good questions and offered honest feedback. One pilot team member said, "I felt like my brain never got to relax," which she found "eye-opening, scary, and wonderful" because it pushed her to be open to new ideas and feel confident in solving problems. Throughout the course of the class and in the months afterward, the Brewer pilot team refined their idea for remote learning into a plan for the . According to this participant, the IMPD course demystified innovation by showing it to be a process one can learn and apply to a specific context. In her words, "innovation was scary for me and now I'm not so scared."

Program description

Brewer's *Nu* pilot model (Exhibit 2) offers students in grades 7–12 the option to learn from home full-time while also having opportunities for in-person engagement, including field trips and participation in school-based activities. Specifically, Brewer's RREV award provides funding for a full-time Remote Learning Specialist (RLS), who is responsible for developing and implementing a "highly personalized" educational program for participating students. School administrators described this role as a "case manager, part teacher, part guidance counselor, and part administrator." The RLS teaches five remote, synchronous social studies classes (Sociology, Psychology, Government, U.S. History, and 20th-Century History), monitors student progress in asynchronous online courses, and holds individual in-person meetings with each student at least once per week for academic and social-emotional check-ins. The RLS also plans in-person activities such as field trips for the entire cohort and liaises with guidance counselors and teachers at Brewer Community School and Brewer High School about student needs, interests, and activities.

Besides the synchronous social studies courses taught by the RLS, students complete a curriculum of online courses through the Apex Learning Virtual School ("Apex") platform. The RLS works with Brewer district guidance counselors to help students choose Apex courses that align with their interests and abilities and meet Brewer graduation requirements. All Apex courses are facilitated by a certified teacher and include multimedia content, practice skills, and a mix of computer-scored and teacher-scored activities and tests. Courses follow an 18-week semester model, although students can complete the course at their own pace within the context of course-specific deadlines. Throughout the year, students meet in person for monthly activities, such as field trips, service projects, and job-shadowing opportunities. Students are also welcome to join in-person classes, such as art or band, and participate in school activities including Chorus, Mock Trial, and Art Club.

EXHIBIT 2. PROJECT LOGIC MODEL[19]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ RREV coach Remote Learning Specialist APEX Learning Platform District and school staff, including guidance counselors and the director of instruction and technology District facilities Community partners	Update district graduation requirements to include pathways for remote learning Collaborate with guidance counselors and teachers to identify students likely to succeed in virtual learning environment Outreach to parents and students identified as likely to succeed with virtual learning, including homeschool families Hire a Remote Learning Specialist (RLS) RLS supports students in the development and progression through an individualized pathway Students participate in field trips, service projects, and job-shadowing opportunities Students participate in school-based activities, including some in-person courses and extracurricular activities.	District graduation requirement policy updated At least 16 students enrolled, including at least 6 tuition-paying students Full-time RLS hired Individualized student academic plans developed Students participate in monthly activities Students complete online and virtual coursework on schedule Students participate in school-based activities	Families in the area have more schooling options Brewer staff improve their capacity to support students learning virtually Students have greater opportunities to set their own pace and pathway Students who choose virtual learning have more opportunities to interact with their peers, teachers, and coaches across the district	More families in Brewer and surrounding areas, including those who previously homeschooled, enroll in Brewer Schools Brewer staff are better able to recognize when students are likely to succeed in virtual learning Student attendance improves Students demonstrate academic growth on NWEA MAP assessments and individual course assessments Students' socio-emotional well-being improves Increased graduation rates for Brewer students	Brewer's school community includes more families with diverse needs and preferences Brewer staff and leadership embrace innovative approaches to education Students with diverse learning styles and interests succeed in Brewer schools

[19] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

Brewer's *Nu* program is innovative and responsive for three main reasons:

1. **Students and families opt in to virtual learning.** Students and families did not have a choice about virtual learning at the beginning of the COVID-19 pandemic, but as schools re-opened for the 2021–22 school year, Brewer administrators decided to offer the option of attending in person or continuing to take virtual classes. As one administrator observed, some students realized during the pandemic that they thrived in an online environment and did not want to be forced back to in-person classes—just as all students had been forced into virtual learning the previous year. Importantly, Brewer administrators wanted students and families to make a considered decision, which is why they require an application and interview process in which students describe why they prefer virtual learning and how they plan to stay engaged during school.

INNOVATIONS

- Students opt in to virtual learning
- Individually tailored support
- Greater student choice in courses and pacing
- Options for in-person activities

2. **Students receive individually tailored support for their academic, social, and emotional needs**. When developing the pilot, Brewer educators specifically sought to be "qualitatively different" than "broad online programs" where students take classes online but have limited interactions with teachers or peers. Brewer therefore built in structures and systems to engage students as individuals, including weekly check-ins with the RLS, a mix of synchronous and asynchronous classes, and in-person group activities, such as field trips and service projects. One administrator characterized the *Nu* program as "the most personalized educational program" she was aware of due to the level of individual attention paid to participating students. During a focus group, students credited the individual support they received from the program with helping them become more confident in themselves, which in turn helped them take more risks exploring classes and activities they otherwise might not have tried.

3. **Students can choose from a broad array of courses and can take them at their own pace.** During a focus group, students said the individual attention—paired with the greater array of courses available online—empowered them to pursue courses that interested and challenged them. By contrast, if they were attending only in-person classes, they would not have access to the Apex course catalog, which has more options. If they were only taking online courses without the broader support of *Nu*, they would not have the confidence to explore more challenging or interesting courses. A parent also said *Nu* "is so much better for [my child's] style of learning because she has more control over when she does the school work and what subject she's going to work on. I think it really helped with her anxiety because if she's feeling overwhelmed, she can take a break."

4. **Students have opportunities to join certain in-person classes and activities at their home school, such as art, theater, or sports.** Brewer administrators pointed out

there are many reasons why some students may prefer virtual learning, and in some cases their preference for virtual academic work may be in tension with their enjoyment of activities or clubs that involve in-person engagement. For example, a student may prefer virtual learning in core subjects because she likes to set her own pace, but also wants to participate in art or theater with her peers. In the absence of Brewer's *Nu* program, such a student could choose to attend in-person school but sacrifice her opportunity to learn at her own pace or enroll in a virtual school that does not offer in-person activities. Brewer's pilot program resolves this tension by allowing students opportunities for both virtual and in-person activities, and thus can reach more students who could benefit from virtual learning.

Implementation of learning model

Student identification and recruitment

When Brewer first drafted the pilot plan, they anticipated offering the *Nu* program to any 7th or 8th grade student who expressed interest, with a maximum of 15 students in 2021–2022. However, during the summer of 2021, district leadership made two changes to the model. First, they decided to limit enrollment invitations during the first year to specific students who were identified by guidance counselors, teachers, or families as likely to succeed in virtual learning based on their performance during schoolwide virtual learning during the pandemic. According to the director of instruction and technology, the decision to change from open enrollment to invitation-only was made to underscore that the *Nu* model would be qualitatively different from the districtwide virtual education of the pandemic, especially with its focus on personalized attention and support. The decision to identify and invite specific students to enroll contributed to the second major change, which was to offer enrollment to high school as well as middle school students. District leadership explained that conversations with guidance counselors, teachers, and families uncovered high school students who fit the profile for success in the *Nu* program. By the end of the first semester, 14 students were in the program: 5 middle schoolers and 9 high schoolers. This figure increased to 20 students during the spring semester, of whom 7 were in middle school and 13 were in high school. This enrollment was higher than Brewer initially planned, especially because the district chose not to publicly advertise the program during the first year. However, they observed strong word-of-mouth discussion of the program among students and parents, prompting more students to apply than expected. One educator remarked that they "have a hard time saying no" to students who seek out the program and align with its student profile.

Staffing

The Brewer pilot plan describes the RLS as a "full-time, multi-age teacher for instruction," and the salary, benefits, and professional development for this position constitute almost 90 percent of the Year 1 budget for the RREV award. Brewer posted advertisements for this position in May 2021 and filled the position in August 2021. The individual hired as the RLS was working as a teacher for an alternative education program in Lewiston (Impact Academy) and previously had served in both teaching and administrative roles for 16 years. This person said he was attracted to the Brewer RLS role because it "looked like an opportunity to start [something] brand new and build it from the ground up. The idea of being able to come in at the beginning was very exciting."

A second RLS will join for the 2022–2023 school year. This person was hired during the spring 2022 semester, but finished the 2021–2022 year as a teacher at Brewer High School and will start full-time in the summer of 2022.

Field trips and team-building activities

There were fewer field trips and team building activities than originally envisioned. *Nu* leadership explained that continued effects of the COVID-19 pandemic made it difficult to plan field trips to museums and other places of interest. *Nu* leadership was optimistic they would implement this component of the program model in future years.

District graduation requirements

District leadership described an ongoing process for updating graduation requirements to include pathways for remote learning. As noted earlier, a key component of the innovative model is the opportunity for students to choose from a wider array of courses than would be available at the high school, and to take them at their own pace. The high school principal and guidance counselor observed that this flexibility poses administrative challenges because they need to align the Apex courses with an approved high school course. The pilot plan identified updating district graduation requirements as a key activity, but Brewer High School leadership said they were "still figuring out" how to integrate online courses through *Nu* with their requirements.

Outcomes

Families in Brewer and the surrounding areas have more schooling options. The 20 students who completed the school year in the pilot indicate progress toward this outcome because all these students would otherwise attend in-person school or be homeschooled. Brewer High School does have an in-person alternative education program called the Alpha program, but it serves a different type of student than *Nu*. While both programs serve students who do not thrive in a traditional classroom setting, they are serving different types of students. The profile of a *Nu* student—self-motivated and able to work independently, even as some (but not all) experience social anxiety—is fundamentally different than that of a student served by Alpha. Alpha is designed for students who often struggle with motivation or behavioral challenges. For example, one student said that she looked into the Alpha program, but "I take a lot of advanced classes [so Alpha] wasn't really the best option for me." In short, the *Nu* program provides an alternative that was otherwise not available to this particular type of student. On a family survey (Exhibit 3, next page), a majority (86 percent) of Nu parents stated that it was "very important" or "moderately important" that schools offer responsive education activities, and 70 percent agreed that Brewer offered more such activities in 2021–22 than in the previous school year. All parents said that they would recommend *Nu* to other families.

EXHIBIT 3. SUMMARY OF PARENT SURVEY RESULTS (N=7)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 56%
	Not at all important – 14%
	Moderately important – 28%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 56%
	Somewhat satisfied – 14%
	Neither satisfied nor dissatisfied – 28%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 43%
	Slightly more opportunity – 43%
	About the same as last year – 14%
Would you recommend this program to other parents?	Yes – 100%

Brewer staff have greater capacity to support students with virtual learning. Another intended outcome of the Brewer program was to grow staff capacity to support students with virtual learning. Staff who work directly with the Brewer program described professional growth in their capacity to support students with virtual learning, especially through proactive communication and relationship-building with students. In particular, the RLS said his experience this year helped him develop more tailored approaches to supporting students in the program. For example, he noted that some students benefit more from more direct questions about their progress in virtual classes, whereas others do better when they lead the conversations. One parent described feeling reticent about allowing her child to participate in remote schooling because she "didn't want to have to constantly monitor her progress," but found it reassuring her child "has a teacher that works within the district and is involved and monitoring her progress as well as teaching one of her classes." Although the staff directly involved in the *Nu* program described growing capacity to support students with virtual learning, this change did not extend to teachers throughout the district. Educators explained the RLS is in regular communication with school leaders and staff at the community school and high school, but these exchanges focus on logistical issues or identifying students who could benefit from *Nu*, and so far have not involved intentional efforts to disseminate lessons learned to traditional classroom teachers.

Students described positive experiences in the program. Students provided uniformly positive feedback on an anonymous survey about their experience in *Nu*. All student respondents agreed that they were glad they participated, that the program helped them learn, and that they liked their experience overall (Exhibit 4). In response to an open-ended question about their overall experience, one student said they "used to dread going to an in-person school at all," but now "looks forward" to school. Another student wrote that it in the past, they "never got . . . to feel comfortable with my teachers and classmates [but] that has changed a lot for me" since starting *Nu*. Students elaborated on these responses during a focus group, in

which they described feeling simultaneously supported and challenged in the program. For example, one student explained that the individual attention she received helped grow her confidence, which in turn made her feel capable and excited about taking more difficult courses. Parents offered similar feedback. For example, one parent said her daughter "feels very accomplished and has even added an additional class when she finished . . . ahead of schedule." This parent observed that her daughter is "a much happier child" since joining *Nu*.

EXHIBIT 4. SUMMARY OF STUDENT SURVEY RESULTS (n=8)

Survey Item	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I participated in the *Nu* program this year.	100%	0%	0%
The *Nu* program helped me learn this year.	100%	0%	0%
Overall, I liked my experience with the *Nu* program this year.	100%	0%	0%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	100%	0%	0%

Students have demonstrated academic growth and greater social-emotional well-being. Among the 20 students in the 2021–2022 pilot, 10 students took NWEA assessments in the fall and spring, and 9 of these demonstrated growth in their RIT score on at least one NWEA assessment. The mean number of credits earned was 5 per student, and the average GPA was 81.4 out of 100. During a student focus group, students drew connections between their social-emotional well-being and their academic performance. For example, one student commented that "my grades went up because I didn't feel insecure" because she was not attending classes in person. Another student said that learning online helped her focus on academics because she was less "distracted and nervous" than she used to feel during in-person schooling. One student said, "I wouldn't be graduating this year if it weren't for the program."

Future plans

Brewer district leadership intends to expand enrollment through greater outreach. Brewer District leadership affirmed their commitment to the program and to its expansion in the coming years. Program leaders noted that they were not awarded funding until August 2021, so they were not able to conduct substantial proactive outreach before the first year, and space was limited because they only hired one RLS. Nonetheless, the program grew from 14 to 29 students between the first and second semester, and Brewer plans to again double the size in 2022–23 when the second RLS joins the program. Leaders observed that the lessons learned during their first year have sharpened their understanding of who makes for a successful *Nu* student. Going forward, they will use this information to communicate with school leaders in sending districts and with homeschool families to boost enrollment from these sources. They also plan to supplement this outreach by placing a notice on their website about the program

and working with the guidance counselors at Brewer Community School and Brewer High School to attract more in-district students.

Leadership plans a greater focus on peer relationships through whole-group activities. During a focus group, students commented that they did not feel very connected to other students in the program. One student said that her participation in school activities does provide for some socialization, but she feels like she interacts with students less now that she is in *Nu*. Many students perceived this as a benefit because it reduced their anxiety, but students in the focus group did express desire for more activities with their fellow *Nu* students. For example, one student commented that she "definitely wished we had more field trips" this year, although she understood that the pandemic rather than the program was the problem. *Nu* leadership agreed that there were fewer in-person activities—such as field trips—than they had planned, but they were optimistic there would be more opportunities in the future.

Lessons learned

Offering opportunities for in-person activities can broaden the appeal and reach of remote learning. Brewer administrators initially expected the *Nu* program to attract families who had decided to homeschool their children, but over the course of their outreach they realized the program's structure—especially its promise of in-person activities—appealed to a more diverse group of students. According to the director of instruction and technology, interest in the program "spread like wildfire" as students learned about how it would work. One Brewer staff member suggested the *Nu* program could dispel the outdated idea that an alternative education approach such as remote learning is just for "the jean jacket kids . . . who listen to European heavy metal." Instead, it could reach a wider range of students who prefer to work independently or have some social anxiety but still want to participate in school activities such as theater, art, or sports. In fact, all 14 participating students in fall 2021 were involved in some school-based activity.

Establishing a structure for individualized student support can help students maintain academic and socio-emotional engagement. While designing the *Nu* program, Brewer administrators were concerned the students who would be most drawn to the independence and self-pacing of remote learning would also be those who needed more support in other areas, especially mental and emotional well-being. As administrators refined the *Nu* program model during and after the IMPD course, they focused on resolving this by developing structure within the model to care for students' mental and emotional needs—while still affording them the independence that attracted them to remote learning in the first place. The centerpiece of this structure is the weekly one-on-one meeting between the RLS and each student. These meetings offer students a regular opportunity to connect and talk about any issues or concerns, including academic or other challenges they may be experiencing. Educators and students both said that the individual student support helped unlock the possibilities of virtual education because it empowers students to choose from a wider array of courses, including some they might consider too challenging were it not for the individual support they receive through the program. The RLS emphasized that "each student has a face and a voice in this program and they are not a faceless member of a larger population." An important aspect of these meetings is that they are predictable and regular, and not ad-hoc or in response to student requests. This approach takes the onus off students, who may not be comfortable asking for help, and also contributes to a rapport that can help students open up about their concerns and aspirations.

Students in virtual settings have different needs and expectations for individual support, and even students who like to work independently benefit from one-on-one support. The weekly meetings between the RLS and each individual student constitutes a key component of the *Nu* model, but the nature of these meetings varies from student to student. The RLS said that some students seek out more in-depth support each week, with substantive discussions about their academic progress, mental and emotional well-being, and future plans. Other students work more independently or are more reticent about sharing their feelings and, if not for the regularly scheduled weekly check-ins, they may not voluntarily reach out for support. However, the RLS emphasized that these students also benefit from the individual meetings, but sometimes need more time to build trust and talk about their lives in general before opening up about their experiences in the program.

The RLS role requires an individual who can manage multiple and varied responsibilities. Even though Brewer has established systems and structures for the *Nu* program, the success of the program still largely depends on the person in the RLS role. Brewer administrators observed that this person needs a diverse skillset, including teaching, administrative, and interpersonal skills. The RLS at Brewer said his experience has been "professionally challenging and rewarding," and noted he drew on his experience in both administration and alternative education. As the first person in this role at Brewer, the RLS established the shape and expectations for the role, and everyone interviewed agreed he set a high bar. The skills and experience required to succeed in the RLS role, and the centrality of this position to the overall success of the model, mean that schools seeking to replicate the *Nu* program model should carefully consider the job description and focus on finding the right candidate.

The model requires time and commitment from staff at Brewer Community School and Brewer High School. The integration of *Nu* program students with the in-person school communities lies at the heart of Brewer's innovative model, which means that Brewer staff, especially school counselors, are expected to make time available to support the program. The RLS explained that "it is very, very important that the *Nu* program [be] viewed as an integral piece of the school culture" and not as a separate program. In practice, this integration includes weekly calls between the RLS and school counselors to review the progress of all *Nu* students as well as an "open-door policy" in case more urgent needs arise. One administrator noted that the flipside to the students' freedom to choose from more classes and take them at their own pace is the added burden for guidance counselors and high school administrators because they have to assess every course and determine if and how it aligns with eligibility for school activities and graduation requirements.

Further COVID-related disruptions could bring challenges and opportunities for the model. Brewer staff has made it a point to distinguish the *Nu* program from the remote learning that occurred during the 2020–2021 school year in response to the COVID-19 pandemic, for reasons discussed earlier. However, if there are further disruptions from the coronavirus, this could pose challenges to the *Nu* program model, especially if it limits opportunities for in-person elements that distinguish the model from more typical virtual learning models. Moreover, COVID-related disruption across the district could add even more stress on teachers and guidance counselors, which could strain the regular and open communication channels that underpin the model. Conversely, a short-term return to widespread remote learning could help more students realize they do well in a virtual environment, and thus in the long run make the *Nu* program model more sustainable.

Individual Adopter School – SU76: Year 1 Case Study

School Union #76, Region 4 – Hancock

Background

School Union #76 ("SU76") is a rural school administrative unit (SAU) serving 445 students in Deer Isle, Stonington, Sedgwick, and Brooklin across four schools: Deer Isle – Stonington Elementary School, Deer Isle – Stonington High School, Brooklin Elementary School, and Sedgwick Elementary School. Deer Isle and the surrounding communities are rural and fishing is the primary industry. The median income is $56,091, which is slightly under the Maine average, but SAU administrators said there is a great deal of economic diversity in the community. The percentage of students identified as economically disadvantaged is above the state average (Exhibit 1).[20]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	310	178,860
Locale Classification	Rural	N/A
Students Identified as White	98%	88%
Students Identified as Economically Disadvantaged	51%	41%
Students Eligible for Free/Reduced Price Lunch (Deer Isle – Stonington Elementary School)	51%	44%
Students Identified with Disabilities	19%	18%
Student/Teacher Ratio	8.83	N/A
Median Household Income	$56,091	$57,918
Adults with a Bachelor's Degree or Higher	22%	32%
Adults in Labor Force	82%	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

In August 2021, SU76 received a Rethinking Responsive Education Ventures (RREV) award ($250,717) to develop and implement a pilot program called *Classrooms in the Community*, which seeks to expand outdoor and place-based education experiences across the school district in the 2021–2022 school year. The program, developed during the winter 2020 Innovative Mindset Pilot Development (IMPD) course, builds on the district's existing outdoor

[20] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018–2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019–2020 school year.

and place-based education opportunities. It was created by a two-person pilot team consisting of the coordinator of grants and professional development / director of adult education and a 5th–8th-grade science teacher. The pilot team said attending the IMPD course was useful in helping them understand what kind of stresses this program could put on teachers and how they could mitigate them. The pilot team also said they found the iterative design process useful in transforming their existing outdoor education activities into a fully developed program. They explained that many teachers began making greater use of the outdoors during the COVID-19 pandemic, but generally did so on their own, and were interested in getting more support in aligning outdoor activities with their broader lesson plans and learning goals.

The wheelchair-accessible nature trail at Deer Isle – Stonington Elementary School.

Program description

SU76's *Classrooms in the Community* program provides a structure for placed-based education throughout the district. Specifically, RREV funding provides for a full-time Place-Based Education Integration Specialist,[21] who is responsible for supporting teachers in the development and implementation of place-based education in two distinct forms: outdoor education on-campus and community-centered education opportunities off-campus. During the pilot year, teachers could volunteer to include outdoor education in their curriculum, but all students are guaranteed to have place-based education opportunities through specials classes and after-school programs.

SU76's RREV award also includes funding for improving the school's outdoor infrastructure to facilitate outdoor education. This includes an expansion of an existing maple swamp nature trail surrounding the Deer Isle-Stonington elementary and high schools to make it wheelchair accessible. The award will also fund the addition of an outdoor classroom adjacent to the nature trail as well as repairs to the existing greenhouses at both Deer Isle-Stonington Elementary School and Sedgwick Elementary School, including supplies needed for it to operate year-round. The program also provides for off-campus place-based learning through community partnerships, including transportation costs and safety equipment such as car seats.

[21] The "Place-Based Education Integration Specialist" in the pilot program is now referred to as the "Director of Place-Based Learning."

EXHIBIT 2. PROJECT LOGIC MODEL[22]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ partnership with Island Heritage Trust Access to 12 preserves on Deer Isle that can be used as outdoor learning classrooms, including the maple swamp nature trail SU76 teachers RREV coach Community partners, including OceansWide, a Maine-based education organization focused on teaching students about the ocean through hands-on experiences SU76 middle school science teacher has initiated many place-based education experiences for students as well as co-creating the school's first nature trail on campus grounds	Hire a Place-Based Education (PBE) Integration Specialist who will support implementation of place-based experiences Expansion of current nature trail, construction of Americans with Disabilities Act-compliant nature trail and outdoor classroom Repair & completion of greenhouse Engage with community partners such as Island Heritage Trust and OceansWide Integrate place-based experiences into the curriculum Professional development opportunities that support teachers, helping them to identify and increase engaging, relevant, place-based education opportunities (e.g., during the new teacher academy and August PD days) PBE specialist works with classroom teachers RREV-funded purchase of a van for student/teacher transportation Creation of "Outdoor Week" districtwide initiative (PBE specialist coordinates this event with community partners)	100% of students participate in expeditionary learning and place-based instruction Over the first year, each grade level will expand to provide at least three PBE events per year	The time required to plan and coordinate PBE opportunities is decreased Teachers have access to units, models, and lessons that incorporate place-based instruction, resulting in more PBE opportunities for students throughout the year Teacher confidence in drawing connections between core content and activities outside the classroom is increased	More teachers will incorporate expeditionary learning into their teaching practice Students that "meet the standards" average will increase Higher student performance related to complex academic content Students will have greater access to authentic work, decreasing the disconnect between what students learn in school and students' lived experiences Students will participate in meaningful experiences that build character Teachers view PBE experiences as a vital component for meeting student needs related to academic outcomes and positive character development Number and quality of school/community partnerships that support meaningful real-world learning is increased	Students will have greater mastery of knowledge and skills Students see themselves as meaningful contributors to a better world Students fully realize their academic potential as place-based learning opportunities center education around the specific context of their community and an "oral culture" Changing community mindsets about the value and impact of expeditionary learning

[22] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

The *Classrooms in the Community* program is responsive and innovative for three main reasons:

1. **Outdoor learning responds to the area's specific culture.** The pilot team commented that traditional classroom settings are not always well-attuned to the specific cultural context of SU76. A pilot team member explained that "fishing families are living in an 'oral culture' rather than a 'print culture'," so there is a discrepancy between what students are prepared to do in a print-cultured school. The outdoor education component of the program is designed to make education more hands-on and experiential to fit this non-print culture. According to the director of after-school programs, "We have a vastly underserved group of students that really needs to use their bodies to activate their brains or to access their retention capabilities. . . . Moving stuff outdoors forces [teachers] in highly literate communities to change our language."

INNOVATIONS

- Outdoor learning is tailored to the local culture
- Links lived experiences with the curriculum
- Teachers decide when and if to join the program

2. **It provides clear connections between the curriculum and the lived experiences of students.** Pilot team members noted many students' lives outside of the classroom revolve around the fishing industry. Since a large proportion of students will likely enter the fishing industry, there is often a disconnect between what they learn in school and what they expect to do after graduation. One pilot team member said that if a student is expecting to make $150,000 a year fishing right out of high school, it is difficult to help them understand the benefits of their education. *Classrooms in the Community* addresses this challenge by creating new place-based learning opportunities both on and off campus that center education around the specific context of their community and draw connections between core content and students' lived experiences and plans for the future.

3. **Teachers can opt in to outdoor and place-based learning.** The designers understood that staff buy-in is critical to successfully implementing this program. They also recognized that teacher capacity for new initiatives during the COVID-19 pandemic has been limited. Direct teacher participation in place-based learning was therefore voluntary rather than mandatory for the 2021–2022 school year. All students could still take part in these opportunities through specials and after-school programs, and specific teachers could expand those opportunities during their own class periods. Those who chose to opt in have additional support from the Director of Place-Based Learning in designing and implementing their curriculum. While SU76 eventually wants all teachers involved in place-based learning, allowing teachers to opt in is intended to reduce the burden on them and focus resources on teachers who are most engaged in the program. The pilot team anticipates that successful projects in the pilot year will inspire other teachers to participate in the future.

Implementation of learning model

School participation

Although the original plan was for *Classrooms in the Community* to be implemented in all four schools in SU76, the program has only taken place at Deer Isle – Stonington Elementary School and Sedgwick Elementary school. The point of contact for SU76 said the reason the pilot has not been implemented in Brooklin yet is because it is a small school that is already "infused in the community" through place-based learning so they did not see a need to implement the new program at this time. However, the point of contact mentioned that the school is beginning to have more conversations about the pilot and hopes that the school becomes more involved next year. Deer Isle – Stonington High School, on the other hand, hired a new principal and had significant staff shortages this year, so the point of contact mentioned that the principal was too focused on the day-to-day operations of the school to have the time or resources to devote to *Classrooms in the Community*.

Infrastructure and equipment

Construction on the maple swamp nature trail surrounding Deer Isle – Stonington elementary and high schools began over 18 years ago and has been regularly expanded as funding became available. The last stretch of the nature trail was completed in the fall of 2021 and includes a wheelchair-accessible entrance to the boardwalk. The RREV funds were also used to modify and buy supplies for the greenhouses at Sedgwick Elementary and Deer Isle – Stonington Elementary. RREV funds were also used for transportation and equipment costs, including the use of vans across the district and purchasing car seats for PreK students, boots for middle school students, and outdoor gear for students in grades K–3 to participate in "Forest Days."

Staff recruitment and training

SU76 intended to hire the Director of Place-Based Learning before the start of the school year but was not able to fill the role until October 2021. Consequently, this person has had less time than anticipated to develop the curriculum because the district did not incorporate co-planning time into teachers' schedules in the beginning of the year because the role was still vacant. As a result, the Director of Place-Based Learning, when eventually hired, had to find time themselves to plan around teachers' schedules, despite the requirement that they spend most of their time with students throughout the day. Additionally, the district has experienced a high rate of leadership turnover in the past few years, including multiple changes in superintendents and principals over the past 2 years. According to the Director of Place-Based Learning, this turnover hindered communication and planning among the teachers involved in the pilot and made them feel as though they were "planning on the go." In June 2022, the Director of Place-Based Learning left their role at the end of the school year, and the role is being filled by the 5th–8th-grade science teacher who was integral in developing the innovative model and writing the grant application.

SU76 has completed several training and orientation events focused on helping teachers develop outdoor and place-based learning opportunities for their students. A "Teach Me Outside" event was hosted in September 2021 by the Maine Mathematics and Science

The greenhouse at Sedgwick Elementary School.

Alliance.[1] This event taught staff about the logistical challenges of teaching outside and how to overcome them. Additionally, teachers in SU76 were given the opportunity to participate in professional development with the Rural Aspirations Project to develop a garden curriculum sequence and identify ways to incorporate outdoor/community education into their classroom curriculum. However, the Director of Place-Based learning said that they were unaware they could use RREV funds to offer teacher professional development, so funding for this opportunity was taken out of a separate budget.

Several staff members described mixed levels of staff engagement during the first year of implementation. More than one interviewee noted that staff are often skeptical about new initiatives because they often lead to additional workload or do not last more than 1–2 years. However, feedback on the pilot program has been very positive. For example, one teacher said he had never seen as much enthusiasm for a schoolwide initiative as he saw during trainings for *Classrooms in the Community*. This teacher said even some staff who are usually "stuck in their ways [were] extremely excited" about the new program because of its relevance to their students, which he found "really exciting." Pilot team members explained that some staff buy-in might be due to prior experience with outdoor learning during the 2020–2021 year because of COVID-19. This has increased teacher confidence in their ability to implement outdoor learning

[1] See MMSA.

and demonstrated its benefits firsthand. Notwithstanding the overall positive reaction to the pilot program, several interviewees reported that a minority of staff are not interested in pursuing outdoor or place-based learning. According to the Director of Place-Based Learning, the teachers who were not interested felt like the program was something "extra" on their plate and indicated there were "too many new things" being introduced at once, which often led to confusion regarding the goals of the program and who to contact with concerns.

Curriculum

The RREV implementation in the fall 2021 semester mostly focused on staff training, building community partnerships, and improving outdoor infrastructure. However, some teachers immediately started implementing outdoor classes. One science teacher (grades 4–7) said she took students out several times a week to conduct science lessons, including observing bird activity, comparing ocean salinity before and after rain, identifying organisms, and observing and reflecting on the environment. Another teacher from Sedgwick Elementary School also regularly took students outside in the fall. Her lessons have included studying, growing, and raising worms and an introduction to composting. Both teachers said they were assisted by the Director of Place-Based Learning in developing these lessons, however they noted that the director's "time was limited" so they were often unaware when the director would be visiting their school each week to help with planning.

In spring 2022, the schools were able to better use the community partnerships and infrastructure developed in the fall. Examples of some activities that took place in the spring included K–7th-graders learning about lobster and sustaining healthy ocean ecosystems through a representative from OceansWide, 7th-graders building catapults outside using concepts learned in math class, and 4th-graders investigating how to make healthy compost through meetings with experts, observations, and experiments. Sedgwick Elementary also worked with Downeast Audubon and the Gulf of Maine Research Institute to build a vernal pool on their nature trail where students could learn about various plants and habitats. At Deer Isle – Stonington Elementary, students used the nature trail and outdoor classroom for activities such as observing plant species and learning about patterns in nature. For example, students in 3rd and 4th grade worked in partnership with Island Readers and Writers and author Kim Ridley to create a field guide for difference species found on the nature trail.

Community partnerships and engagement

SU76 has secured two major partnerships to support the *Classrooms in the Community* program:

- Island Heritage Trust is a land trust on Deer Isle that includes extensive natural resources and several learning spaces. Deer Isle – Stonington has often worked with the trust to provide space for field trips and afterschool programs, but the *Classrooms in the Community* program provides for a more structured partnership and additional field trips and afterschool activities. Blue Hill Heritage Trust covers Sedgwick and Brooklin elementary schools. The educator at Blue Hill Heritage Trust had been on extended leave in the fall so they were not involved with the schools, however the Director of Place-Based Learning said that they became more involved during the spring and have plans in place for a much more involved start next year.

- OceansWide is a Maine-based education organization that focuses on teaching students about the ocean through hands-on experiences. The organization began its relationship with Deer Isle – Stonington through the Maine Mathematics and Science Alliance. As part of the *Classrooms in the Community* project, Deer Isle – Stonington will partner with OceansWide to create an Ocean Sustainability Project for students. It will teach students about the ocean ecosystem and health through hands-on activities for all grade levels. These activities include teaching students how to pilot remotely operated vehicles (ROVs) in the water, scuba diving for the older students, art projects using recovered "ghost traps" (forgotten fish traps that litter the ocean floor), and bringing in fishermen and other community members to teach students about the ocean. The goal is to make this a long-term project so students will engage with it throughout their entire education, from kindergarten through 12th grade.

RREV coaching

The Director of Place-Based Learning and the RREV coach meet on a weekly basis. During these meetings, the RREV coach provides advice about program implementation, such as finding resources about incorporating outside activities into history and math classes. However, the RREV coach described some confusion about her role, especially to what extent she should provide specific feedback on classroom activities or serve as a broader strategic advisor. For example, she mentioned that the school was interested in creating a website for teachers to share resources, but it was unclear to her whether she should help develop the website or advise the school to wait until they could use EnGiNE for this purpose. The Director of Place-Based Learning, who met with the RREV coach on a weekly basis, said that the RREV coach was integral in sharing resources for Outdoors Week and providing feedback on their role. Specifically, the Director of Place-Based Learning mentioned that the best part of the RREV coach was "hav[ing] a peer" in the process, especially amid the administrative turnover and lack of planning time that they had to navigate throughout the first year of the program.

Outcomes

Students displayed higher levels of engagement and socio-emotional well-being when learning outdoors. Students in SU76 expressed high levels of satisfaction with outdoor learning, describing it in the focus groups as "calming," "interactive," "useful," and "more fun." These students said that being outside helps them focus more on their tasks, as well as learn life skills such as cooperation and teamwork. For example, one 7th-grade student said their class is using math and science concepts to design catapults that they will use to launch watermelons in their field, and credited outdoor learning with teaching them how to work together as a team since they were asked to carry out cooperative tasks that would not have been possible in an enclosed space inside. Teachers have also noticed that students respond better to outdoor learning. One teacher described socio-emotional well-being as "still really rough" as a result of the pandemic, but has found that outdoor learning keeps students "active and focused." Additionally, the teacher noted that being outdoors allows students to "express themselves," whether it is writing in their nature journal or just sitting quietly to observe the environment around them.

Students incorporated their lived experiences with what they are learning in school. Since SU76 has a strong fishing culture and close-knit heritage, one goal of *Classrooms in the*

Community is to incorporate students' lived experiences into their educational experience. Through the community partnerships with OceansWide and Island Heritage Trust, students are able to partake in activities such as SCUBA diving, piloting underwater ROVs, and other ocean preservation activities that teach students about science, robotics, and ecology while involving them with their local community. One community partner said that they have witnessed firsthand how well the students are responding to outdoor learning and said that the program allows kids to "do the things they are used to doing here," including running boats and exploring nature.

Most students agreed that going outside more this year helped them learn. The improvements to the nature trails and outdoor classrooms that were made possible by the RREV grant has created more meaningful learning opportunities for students. On a student survey (Exhibit 3), 85 percent of students said they were glad they went outside the classroom to learn this year, and over 70 percent of students agreed that going outside helped them learn this year. During focus groups, students were asked why they learn better outside, and many said that they are "hands-on" learners, so being outside helps them apply what they learn in the classroom to the real world.

EXHIBIT 3. SUMMARY OF STUDENT SURVEY RESULTS

To what extent do you agree or disagree with the following statements	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I went outside the classroom to learn this year. (n=90)	85%	13%	2%
Going outside the classroom helped me learn this year. (n=89)	73%	24%	3%
Overall, I liked my experience going outside the classroom to learn this year. (n=88)	78%	16%	5%
This year, I had more opportunities to learn outside a traditional classroom than in the past. (n=89)	69%	22%	9%

Parents noticed a change in their children's behavior as a result of the RREV award and report high levels of satisfaction with outdoor learning. Given the vibrant fishing culture and opportunity for students to make money soon after high school, the Director of Place-Based Learning mentioned that parents in SU76 sometimes struggle to see the value in traditional education. However, they mentioned that parents are excited when they hear about outdoor learning at the school because it closely aligns with their own experiences. On a parent survey (Exhibit 3), 100 percent of parents reported that their child enjoyed participating the *Classrooms in the Community* this year, and 100 percent were satisfied with their child's experience. Parents also offered positive feedback on an open-ended question about the pilot. For example, one parent observed that their child "felt more connection to the earth" and has been excited about learning during the program. This parent also stated that their child comes home "energized

about planting seedlings," which has led to family activities in the garden. During focus groups, parents were asked to elaborate on why they are satisfied with the program. One parent noted that outdoors is "where their child's passion is," and said that their child is more likely to talk about what they learned in school that day when they go outside. Another parent said that outdoor learning has been an "amazing thing" for their children, and they enjoy watching their children "absorb" the information and get excited about the place-based projects.

EXHIBIT 4. SUMMARY OF PARENT SURVEY RESULTS

To what extent do you agree or disagree with the following statements	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
My child enjoyed participating in *Classrooms in the Community*. (n=10)	100%	–	–
My child learned a lot participating in *Classrooms in the Community*. (n=10)	90%	10%	–
I am satisfied with my child's experience with *Classrooms in the Community*. (n=9)	100%	–	–

Students have demonstrated academic growth during the 2021–2022 school year. Among the 220 students involved in the program, 214 students (97 percent) achieve a higher NWEA RIT score in the spring than in the fall on at least one NWEA assessment. Students with an individualized education plan or 504 plan demonstrated similar growth, as 68 of 71 students (96 percent) also achieved a higher NWEA RIT score in the spring on at least one assessment. These academic outcomes aligned with student and teacher sentiment during the focus groups, during which many students noted that being outside helps them learn better and many teachers reported that being outside helps their students clear their minds and focus more on what is in front of them.

Future plans

Some educators and staff involved in *Classrooms in the Community* expressed uncertainty about the sustainability of the program in the years ahead. As mentioned before, the Director of Place-Based Learning, who oversaw all operational aspects of the program in the 2021–2022 school year, left the role in June 2022. Additionally, SU76 has experienced a high level of staff and administrative turnover over the past few years. As the Director of Place-Based Learning put it, mostly everyone who was involved in the development of the pilot model has left the district or retired. As a result, some staff expressed uncertainty as to what next year will look like. However, one of the creators of the pilot model will be taking over the role of Director of Place-Based Learning, so they will have a good sense of the vision and goals of the program. When we spoke with this teacher, they were "excited and amazed" at what they were able to accomplish in their first year and were enthusiastic about sustaining the program. Going forward, the success of *Classrooms in the Community* will rely on teacher buy

in to continue implementing the place-based activities next year, along with the continued support of the new Director of Place-Based Learning in overseeing the program.

The pilot team hopes to expand the program into Brooklin Elementary School and Deer Isle – Stonington High School. As mentioned, in Year 1 *Classrooms in the Community* only took place at Sedgwick Elementary School and Deer Isle – Stonington Elementary School. Those involved in the pilot program said that a goal for next year is to incorporate place-based learning into Brooklin Elementary and Deer Isle – Stonington High School. The Director of Place-Based Learning mentioned that preliminary conversations have already started taking place with Brooklin Elementary, and one member of the pilot team said that creating the shared resource would make it easier to connect with Deer Isle – Stonington High School. By involving all schools in the pilot program, students of all grade levels would be able to experience outdoor learning and increase communication among schools, which some staff mentioned was lacking during the first year of implementation.

Lessons learned

Staff with responsibilities across multiple schools must balance competing demands from teachers across the district. During focus groups and interviews, teachers and administration alike expressed how important the Director of Place-Based Learning was to the success of the program this year. However, some noted, including the Director of Place-Based Learning, that the responsibilities of the position were too demanding for a single person. For example, the Director of Place-Based Learning had to spend the majority of their time with students, which left very little planning time with teachers. When coupled with needing to manage multiple schools throughout the district, the Director of Place-Based Learning was often stretched too thin in their role. As a result, the Director of Place-Based Learning, along with multiple teachers and administrators, recommended that the role be spread across multiple stipend positions that each are assigned to one of the four schools. Having consistent, local support in the schools would increase communication and decrease the separation between the program itself and the teachers and administrators implementing it.

Clarity about goals and expectations are vital to building teacher buy-in. The Director of Place-Based Learning in SU76 mentioned that there were mixed levels of buy-in from teachers when the RREV award was announced. They mentioned that teachers are already overworked and burned out, and in the beginning of the program some saw the program as “another thing on their plate” that they need to incorporate into their busy schedules. Additionally, educators expressed confusion as to what the RREV award is actually for, especially since many of them already incorporate outdoor learning into their curriculum. As a result, the Director of Place-Based Learning said that teachers often expressed hesitation when encouraged to implement something new from the award, leading to less innovation and change throughout the district. As one educator put it, “Old dogs don’t learn new tricks that easily,” so some teachers who have established themselves and their curriculum have had a difficult time opening up to the program. This educator, when asked how to increase teacher buy-in, said “you need to ask teachers what they want and how they can use the outdoor curriculum,” and give teachers the “latitude” to figure out how they want to incorporate outdoor learning into their own curriculum. The Director of Place-Based Learning said that a stipend or other incentive for teachers who invest time in developing the program and mentoring others may also help increase buy-in next year

Staff buy-in is crucial to implementing place-based learning. Place-based learning requires teachers to get out of their comfort zone and invest extra time in developing new teaching methods. While the full-time Director of Place-Based Learning can help reduce this burden on teachers, it still requires extra effort and buy-in from staff. SU76 has helped get this crucial buy-in by involving teaching staff in planning and developing partnerships. They have also focused on supporting staff who are already interested in place-based learning so that they can develop models other teachers can follow. Although pilot team members said there were mixed reactions from teachers at the beginning of the program, more teachers are beginning to open up to the idea of outdoor and place-based learning.

Another section of the ADA-accessible nature trail at Deer Isle – Stonington Elementary School.

Inexperienced teachers would benefit from taking students outside for non-academic purposes before attempting outdoor lessons. Inexperienced teachers described feeling surprised by the degree of logistical and pedagogical challenges posed by outdoor education, which elevates the importance of supportive programs to help teachers grow their confidence. Pilot team members said teachers do not always have the tools or knowledge to handle classroom management, manage outdoor supplies, adapt to changes in weather, or respond to other variables that are not present indoors. SU76 helped mitigate these concerns by providing specific trainings around logistics and preparedness. The 2020–2021 school year also forced teachers to regularly take students outside due to COVID-19, which some teachers said increased their comfort level with outdoor learning. As a result, encouraging inexperienced teachers to take their students outside for non-academic purposes such as lunch and recess can help them become more comfortable with logistics and classroom management before attempting to integrate outdoor learning into their lessons plans. By doing so, teachers will gain "practice," which in turn could help build confidence with outdoor learning.

Individual Adopter School – St. George: Year 1 Case Study

St. George Public School, Region 5 – MidCoast

Background

St. George Public School ("St. George") is a rural coastal municipal school unit (MSU) in MidCoast Maine that serves approximately 280 students in its K–8 school. St. George has deep historical ties to the fishing industry, which continues to be a key to the town's economic vitality and involves many year-round community members. The median household income ($52,572) is slightly less than the state average. However, the percentage of students identified as economically disadvantaged or eligible for free/reduced lunch is slightly lower than the state average (Exhibit 1).[2]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	278	178,860
Locale Classification	Rural	N/A
Students Identified as White	98%	88%
Students Identified as Economically Disadvantaged	40%	41%
Students Eligible For Free/Reduced Price Lunch (St. George Public School)	33%	44%
Students Identified with Disabilities	17%	18%
Student/Teacher Ratio	10.20	N/A
Median Household Income	$52,571	$57,918
Adults with a Bachelor's Degree or Higher	33.3%	32%
Adults in Labor Force	58%	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

In 2016, St. George convened a working group of school administrators and staff, parents, and community members to discuss the school's programs and facilities. These stakeholders identified career and technical education (CTE) as a community priority, with an emphasis on hands-on technical programs that could strengthen the economic resilience of the local area.

[2] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018–2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019–2020 school year.

Construction of the St. George Makerspace Building has begun.

In response to this, and with a donation from a local community member, St. George began a *Makerspace Initiative* in 2016 to introduce students to new ideas, career opportunities, and ways of learning. When asked about the goals of the overall initiative, one administrator reported that they sought to engage *all* students, but felt the model would be especially valuable for two groups of students. The first group of students were those with academic and behavioral difficulties who were discouraged and disengaged in traditional classrooms, had low attendance, and were more at risk of dropping out. Some of these students needed hands-on/minds-on activities to learn and demonstrate their knowledge and skills. School leaders felt that without this type of learning, these students could disengage or act out in class. The second group of students did well in school academically and behaviorally but preferred to engage in their learning in a different way by building, innovating, and acting as young entrepreneurs. The *Makerspace Initiative* is intended to re-engage both groups of students while acting as a catalyst for innovative projects and teaching practices that benefit all students.

The school's superintendent, the technology and makerspace director, and a STEAM (science, technology, engineering, arts, and math) educator participated in a winter 2020 session of the Innovative Mindset Professional Development (IMPD) course. The team entered the course with the idea of using a Rethinking Responsive Education Ventures (RREV) award to build on their

existing *Makerspace Initiative*, and they fine-tuned this idea during the course. In particular, they credited the IMPD course with helping them identify a need to make the CTE programming more accessible for all students and to create pathways for students to continue CTE programming through high school graduation.

Program description

In August 2021, St. George received a RREV award ($250,000) to strengthen their CTE programming, especially by expanding access for kindergarten through 8th-grade students. Specifically, RREV funding will be used to build a K–8 CTE Makerspace Building at the school. According to the RREV application, St. George's Makerspace Building is not only a "place" where people and students gather to build, create, and innovate, but also an "idea"—students learn best while participating in creating something tangible and meaningful.

According to St. George's RREV application, the construction of the new building is intended to support the school's broader CTE program goals, including accessible CTE programming, new pathways to graduation, and helping students gain employable skills. A school administrator said that in the 2021–2022 school year a key component of implementing the model includes developing scope and sequence that integrates CTE with core academics, with the goals of getting students college- and career-ready, enhancing future employability, and fostering technical and job-specific skills.

Although St. George will primarily focus on providing CTE education to their K–grade 8 students, the school has partnered with nearby Mid-Coast School of Technology (MCST), a regional career and technical education school that provides high school-level programs, adult education, and college courses. By partnering with MCST, St. George students can continue engaging in CTE programming through graduation. Typically, St. George high school students have the option to attend MCST while receiving their diploma from another one of their receiving high schools. The K–12 CTE program will allow students to enter high school with greater technical skills and a deeper understanding of professions in the trades and technical fields. According to St. George leadership, this program will allow students to advance more quickly through MCST courses and increase the number of students pursuing occupations in the trades and technical fields.

EXHIBIT 2. PROJECT LOGIC MODEL[1]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ and coaching Institutional experience and community buy-in from existing Makerspace Initiative Mid-Coast School of Technology (MCST) MCST Grant for shop equipment ESSER* $ Private donations Business sponsorships Personnel: Tech Makerspace director, STEAM educator Volunteers Teachers	Establish a CTE working group composed of St. George School staff and board members, MCST staff and board members, St. George parents, and community stakeholders including local business owners and contractors to design K–8 CTE scope and sequence Hire a St. George CTE teacher Provide professional development to teachers on incorporating CTE activities in their lessons Conduct community outreach and fundraising, including presentations, social media posts, and letters to families Raise funds from state and local grants, private donations, business sponsorships, and Buy-a-Brick campaign Engage an architect to produce plans for Makerspace Building Construct Makerspace Building	Number CTE working group meetings Development of a K–8 CTE scope and sequence Number of teachers who incorporate CTE in their lessons and activities Number of CTE-related lessons and activities Number of students who participate in CTE educational activities such as 3D printing, laser cutting, and programming Amount of funds raised Architectural drawings completed Construction of Makerspace Building completed	Strengthened relationships between St. George and the community and local institutions, including MCST, local businesses Improved teacher knowledge of CTE principles and connections to other subjects Increased student participation in CTE activities Completion of architectural drawings Construction of Makerspace Building	Increased enrollment and retention of St. George alumni at MCST Improved student career readiness Improved graduation rates Improve student social-emotional growth	Greater integration of St. George and the local community and economy St. George alumni pursue satisfying careers

*U.S. Department of Education American Rescue Plan Elementary and Secondary School Emergency Relief (ESSER) Fund

[1] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

St. George's program is innovative and responsive for three main reasons:

1. **It provides CTE across all grade levels, including students younger than those traditionally served by these programs.** CTE programs have generally been offered to students in higher grades, so St. George's program is innovative because it extends CTE programming to students starting in kindergarten. Moreover, St. George's partnership with MCST provides a pathway for CTE opportunities throughout a student's entire K–12 experience.

2. **It promotes new ways to demonstrate learning.** St. George administrators will work with teachers to think about new ways for students to demonstrate learning compared to traditional assessments or writing assignments. St. George leadership believes the CTE program will allow students to use a range of abilities and creativity to demonstrate successful learning through hands-on educational opportunities not currently available to them. For example, a St. George administrator explained that instead of taking a written test on water quality, students could build a probe to monitor the salinity and temperature of the marsh next to the school.

INNOVATIONS

- Expands CTE to younger students
- Allows students to demonstrate learning in non-traditional ways
- Developed to support students and the community

3. **It is integrated in the local community.** As noted earlier, St. George convened community working groups to inform the development of their CTE programming. This input is reflected in several aspects of the program, including its emphasis on helping students develop employable skills that are in demand locally (e.g., town, region, and state). The technical skills and innovative thinking students can learn through the K–8 CTE program at St. George and the high school courses at MCST will allow them to enter high-paying jobs in their local community. The skills they develop—from woodworking to welding, from computer programming to operating a CNC router—are in high demand and necessary to the economic resilience of the community.

Implementation of learning model

Makerspace Building development

During the 2021–2022 school year, St. George hired an architect and created a CTE working group to inform the design of the CTE Makerspace Building and development of the anticipated *Makerspace* programs. This working group met six times during the school year, and as of June 2022, St. George administration reported that almost all (90 percent) of the architectural drawings for the building had been shared with this working group.

Additionally, St. George has raised over $1.4 million in funds procured from state and federal sources (including RREV), private donations, business sponsorships, and a school-initiated "Buy-A-Brick" fundraising campaign. St. George anticipates reaching their goal of $1.5 million by

the end of summer. With their fundraising goals nearly reached, St. George leadership anticipate that construction of the K–8 Makerspace Building will begin by late 2022.

Curriculum development

During the 2021–2022 school year, St. George began planning their K–8 CTE scope and sequence. This curriculum is intended to build on the ongoing work of their technology and makerspace director and STEAM educator.

As of June 22, 2022, St. George administration reported that a group of teachers met several times throughout the school year to begin developing the CTE scope and sequence specifically for grades 5–8. This group also met with the director of MCST, who provided guidance on adapting CTE learning standards for elementary and middle school students. During interviews, one teacher shared that one of the ultimate goals of the scope and sequence is to provide all K–5th-grade students a flexible and natural introduction to CTE while providing a more focused CTE curriculum to students in grades 6–8 that aligns with common core standards. St. George anticipates the K–8 scope and sequence will be completed by spring 2023.

Ongoing CTE experiences

Although the K–8 Makerspace Building has not yet been constructed, students at St. George continue to engage in a variety of CTE educational activities that use their current Makerspace area, such as 3D printing, laser cutting, and programming activities. These activities are led by the makerspace and technology director, STEAM educator, and teachers who have integrated CTE activities into their lesson plans.

The makerspace and technology director reported that he engages students in CTE activities one-on-one, in small groups, and in full classes alongside classroom teachers. The makerspace and technology director reported regularly interacting with teachers and staff at the school to explore how the *Makerspace Initiative* could support or enhance student experiences.

Additionally, K–8 students participate in a STEAM class once a week with the school's STEAM educator. The STEAM educator said she strives to engage students in hands-on, kinesthetic learning that aligns with what they are learning in their core classes, and often incorporates CTE activities. For example, the STEAM educator engages students in building 2- and 3-dimensional automatons and programming through Sphero. St. George's makerspace and technology director and STEAM educator also lead the robotics club for 8th-grade students. During this past school year, students in the club competed in a Lego robotics competition.

Several teachers interviewed shared that they have incorporated CTE activities into their lessons. For instance, one teacher reported that CTE is incorporated into each unit: "Whether it be in math or with our ELA. . . . Once per unit there's something built in where we're integrating hands-on [learning] where we're building or working with [the makerspace director]." Teachers interviewed noted that the makerspace and technology director actively helps coordinate and implement these activities.

Outcomes

Outcomes of the first year of RREV implementation are based on survey results from 43 parents/caregivers and 31 students, as well as interviews with teachers and administration.

Surveyed parents/caregivers in St. George report having access to the responsive educational activities they want. In a parent/caregiver survey (Exhibit 3), all respondents (n=43) agreed that it was "very important" or "moderately important" that schools offer responsive education activities, and 88 percent reported that they were "very satisfied" or "somewhat satisfied" with such activities offered by St. George. Almost three-quarters (72 percent) of parents/caregivers agreed that St. George provided more responsive education activities during the 2021–2022 school year than the previous year. All respondents reported that they would recommend the *Makerspace Initiative* program. When asked to explain why they would recommend it, several parents/caregivers reported that the program prepares students for the future, and helps value, identify, and build on different skills and talents. For instance, one respondent said, "This is the way the world is moving. We need to maximize our children's and communities' exposure to utilizing technology in ways that expand opportunity. It's all about opportunity—the more you have, the better choice you can make to compliment your strengths."

EXHIBIT 3. SUMMARY OF PARENT/CAREGIVER STUDENT SURVEY RESULTS (N=43)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 86%
	Moderately important – 14%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 35%
	Somewhat satisfied – 53%
	Neither satisfied nor dissatisfied – 9%
	Somewhat dissatisfied – 2%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 35%
	Slightly more opportunity – 37%
	About the same as last year – 21%
	Slightly less opportunity – 2%
Would you recommend this program to other parents?	Yes – 100%

Surveyed students report positive views about opportunities and experiences with the *Makerspace* program and the creativity it fosters. In spring 2022, a survey was administered to all students in grades 4–8 at St. George. Most students (80 percent) who responded (n=31) liked their overall experience in the program and 85 percent were glad they built and created things this year. Just over three-quarters of students (76 percent) agreed that these activities helped them learn (Exhibit 4). When asked to explain their favorite aspects of the program, several students noted these activities allowed them to be fun and creative, collaborate with peers, and have a tangible, finished product. While some students noted enjoying specific projects (e.g., robotics, toboggan building, stop motion movies, and rockets) and the trial-and-error process, one student simply noted enjoying the fact that "there is no limit on what I can make." Most respondents said they would not change a thing about their experience. However,

some students reported they would like to engage in activities that allow them to build and create more often, with some sharing they would enjoy having a bit more freedom or input into the projects they do.

EXHIBIT 4. SUMMARY OF STUDENT SURVEY RESULTS (N=31)

To what extent do you agree or disagree with the following statements	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I built and created things to learn this year.	85%	11%	4%
Building and creating things helped me learn this year.	76%	20%	4%
Overall, I liked my experience building and creating things to learn this year.	80%	15%	4%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	52%	26%	22%

Educators interviewed perceive that students take pride in their work and are able to find "their path" at school. During interviews, teachers and administration reported on their perceived impacts of the current *Makerspace Initiative* program. Several teachers reported that students who engage in these activities take pride in their work and are excited about learning and creating something tangible. Moreover, several staff echoed similar examples of how *Makerspace* activities help students find their path in school. For instance, several staff explained how a former 5th-grade student, who was struggling to engage in school through the traditional coursework, was able to work with the makerspace director, spending time in the makerspace area and engaging in CTE activities. This experience had a significant impact on this student, as he was able to re-engage in his schoolwork and create goals around one day becoming an engineer.

Teachers interviewed "go beyond" traditional classroom instruction. During interviews, teachers noted that the school's current CTE initiatives encourage them to be creative in their lesson planning to engage their students in more CTE activities and learning that is "fun." School administration also noted that teachers who actively incorporate CTE activities into their curriculum are inspiring other teachers to get involved as well. For instance, one administrator shared that a teacher who incorporated laser cutting into her lesson on topography and engaged students in creating topographic maps inspired another teacher to modify her class's final project from a simple drawing of a community to a depiction of that community incorporating both laser cutting and student drawings.

Future plans

K–8 Makerspace Building: construction, curriculum, and staffing. With construction expected to begin later this year, St. George administration hopes to have the K–8 Makerspace Building up and running for the 2023–2024 school year, along with implementation of their K–8

CTE curriculum. St. George administration aimed to develop a draft of the CTE scope and sequence for grades 5–8 by the end of the 2021–2022 school year. As of June 30, 2022, this scope and sequence has not yet been drafted, but school administration reported that development of it will continue next year, with a plan to submit a curriculum outline to the school board in the spring.

St. George school leadership is currently working internally and with MCST to determine the staff who will run the Makerspace Building upon completion. Leadership reported that staff will include the current makerspace and technology director and STEAM educator and may include an additional CTE teacher.

The Makerspace as a place for innovation and supporting the whole community. In addition to providing direct opportunities for their K–8 students to engage in CTE activities and programming, administration at the school reported that they anticipate the building will support the "passion projects" of their students. For instance, a school staff member shared:

> *"This is a space where I want anybody in this community to come in with an idea and [our] answer is, 'Yes, we can support you in doing that,' whatever that is . . . I imagine high school kids being like, 'Let's make a go cart from scratch that's solar powered.' We're not going to buy anything; we're going to make every piece."*

Moreover, administrators at the school also reported that they intend the Makerspace Building to serve as an economic development and resource center for the larger community. For example, leadership shared that a local organization reached out to the school to see if they could assist in creating/3D-printing a specific tool for a local oyster farmer. The makerspace and technology director is currently testing materials to create this tool. Administrators at the school further explained that they envision the Makerspace Building as being a resource for developing tools and resources that are not commercially available.

Lessons learned

Fundraising is challenging, but the community support for the *Makerspace Initiative* has been critical. According to a member of the St. George School Board, one of the greatest challenges related to the program this year has been procuring funding. In addition to COVID-19-related supply chain issues, construction of the Makerspace Building was delayed until adequate funds were raised. Once the school raised close to their initial budget estimate of $1.2 million, school leadership was able move forward with finalizing their architectural plans. A referendum vote planned for mid-July will allow school leadership and administration to begin preparing for the construction bid process.

As noted previously, by June 2022, over $1.4 million had been raised for the K–8 Makerspace Building. The school board member reported that community support for this project has been essential, and that over half of the funds raised (about $750,000) have been through direct donations from community members in St. George. The school board shared that the community is excited about the CTE program and *Makerspace*:

> *"They wish that this opportunity had been available for their children or themselves and they're really excited for the opportunities it's going to provide our students and really our overall community—that we hope to be*

able to expand this building to work beyond the K to 8 level and be something special for everyone."

According to the school board member, the Makerspace Building working group intends to continue their public engagement efforts at the upcoming "St. George Days" event by hosting a table and providing information about the status and plans of the Makerspace Building. There are also plans for an in-town newspaper to print a special edition dedicated to the project. Physical copies of the newspaper are planned to be available at local stores, the library, and post office.

An inherent challenge is the lack of K–8 CTE examples and models from which to learn. St. George leadership and teachers noted that one of their biggest challenges is the novelty of K–8 CTE programming. Although this contributes to the innovativeness of their program, it also means there are few established CTE programming models for St. George to lean on for younger students. During interviews with teachers, several noted that the lack of CTE models for younger students is a challenge that contributes to the need for additional time and research to develop the curriculum scope and sequence. School administrators reported that they are leveraging their partnership with MCST to build out their K–8 program implementation.

Individual Adopter School – Camden-Rockport: Year 1 Case Study

Maine School Administrative District #28, Region 5 – MidCoast

Background

Maine School Administrative District #28 (MSAD #28) is a rural school administrative unit (SAU) that serves students across two schools: Camden-Rockport Elementary School ("Camden-Rockport"), serving grades PreK–4; and Camden-Rockport Middle School, serving grades 5–8. The SAU, about 50 miles south of Bangor, is implementing the Rethinking Responsive Education Ventures (RREV) pilot model. Camden-Rockport teachers and administrators characterized the community as "mostly affluent," which aligns with socioeconomic data from the National Center for Education Statistics (NCES). The median annual household income ($67,106) is higher than the Maine average, and the proportion of students who are economically disadvantaged or eligible for free/reduced price lunch is less than half the state average (Exhibit 1).[26]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	722	178,860
Locale Classification	Rural	N/A
Students Identified as White	96%	88%
Students Identified as Economically Disadvantaged	18%	41%
Students Eligible For Free/Reduced Price Lunch (Camden-Rockport Elementary School)	20%	44%
Students Identified with Disabilities	17%	18%
Student/Teacher Ratio	11.04	N/A
Median Household Income	$67,106	$57,918
Adults with a Bachelor's Degree or Higher	73%	32%
Adults in Labor Force	90%	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

In August 2021, Camden-Rockport received an RREV award ($235,800) to develop and implement *Out and About: The Outrageous Outdoors!* beginning in the 2021–2022 school year.

[26] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018-2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019-2020 school year.

Third-grade students design and build kites to connect science standards of forces and motion.

The pilot model was developed by the district assistant superintendent and a Camden-Rockport K–2 teacher ("the pilot team") during the winter 2020 Innovative Mindset Pilot Development (IMPD) course.

Both team members described the IMPD course as a prerequisite to applying for the RREV award but did not consider the course itself instrumental in their program development. The pilot team explained that Camden-Rockport had been infusing outdoor learning into the curriculum for the past several years and saw the RREV award as a vehicle to translate these existing efforts into a more structured program. School administrators and teachers also noted that the COVID-19 pandemic created further impetus for developing an intentional outdoor learning program. As one school administrator said, "COVID actually helped get more enthusiasm for applying for the [RREV award]—a way to get masks off!"

Additionally, the pilot project was described as part of a longer-term goal of supporting students' social/emotional health, which school leadership expects to ultimately improve academic outcomes. Finally, the outdoor learning program was described as providing an equity opportunity for students. The school principal explained that while Camden-Rockport is a generally affluent community, approximately 20 percent of students are from low-income households where engagement with the outdoors is limited. Specifically, he said, "a good chunk of our student body does have really robust summer opportunities, and families are traveling on weekends and going here, there, and everywhere. But that's not the case for a fifth of our population. And they struggle to achieve outcomes relative to the rest of our student body. So,

this is a real opportunity to level that playing field a bit." Another dimension of this equity lens is that all students, regardless of which teacher they have, receive equal opportunities to learn outside.

Program description

The *Out and About: The Outrageous Outdoors!* program focuses on increasing outdoor learning experiences for students in grades PreK–4 at Camden-Rockport. The elementary school is surrounded by an array of ecosystems among the mountains, lakes, rivers, harbors, and shorelines of MidCoast Maine. Camden-Rockport sees its pilot program as a way to capitalize on these assets through more structured outdoor learning spaces and programming for students and teachers that will enhance their educational experiences. According to school administrators and teachers, Camden-Rockport had been incorporating elements of outdoor learning for years prior to the RREV program, but COVID-19 provided the impetus to help make this a standardized practice for all students.

The overarching purpose of the pilot is to be more structured and intentional about weaving outdoor learning into the daily curriculum for all PreK-4 students in ways that are connected to learning standards. A key component of this structure is Camden-Rockport's partnership with the Hurricane Island Center for Science and Leadership ("Hurricane Island"). Through this partnership, most Camden-Rockport staff participated in a 2-day professional development workshop focused on how to best integrate content area standards with the guiding principles of outdoor learning. Hurricane Island also offers ongoing coaching and support for teachers throughout the school year.

The RREV pilot project also incorporates a "residency" approach in which Camden-Rockport teachers are partnered with a regional expert to co-plan and co-facilitate project-based learning for students. The RREV award includes funding for two outdoor liaisons, who are Camden-Rockport staff receiving stipends who will work with teachers to identify local experts to collaborate with each team.[27] By the end of the school year, each team will develop an outdoor residency team project. These projects can be week-long or month-long endeavors. For example, one team has been doing some preliminary brainstorming around developing a resource to help students identify the different flowers and plants around the school. Another team set up a 9-week residency with a program called Chewonki (an outreach program in Wiscasset, Maine) to create outdoor learning experiences that aligned with the multi-age (K–2) class curriculum on animals and birds.

[27] In this context, "team" generally refers to grade levels. There are seven teams total: Pre-kindergarten, kindergarten, first grade, second grade, third grade, fourth grade, and the multi-age program (kindergarten through second grade).

EXHIBIT 2. PROJECT LOGIC MODEL[28]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ MSAD #28 schools are surrounded by accessible ecosystems (mountains, lakes, rivers, harbors, and shorelines of MidCoast, ME) Community partners MSAD #28 teachers Bisbee grant (local endowment for schools) RREV Coach	Collaboration with Hurricane Island (2-day professional development workshop on how to integrate content area standards with guiding principles of outdoor learning, plus ongoing coaching and support for teachers throughout the school year) Partner with local and regional experts to provide outdoor learning community partnerships; co-planning and co-facilitating student learning activities using a "residency" model On-site outdoor learning spaces as well as "wild card" spaces are explored and utilized for learning by PreK–4 students Outdoor liaison (stipend position) will work with staff to identify local experts to collaborate with each grade level Purchase and prepare Learning Kits (grab-and-go bags) with necessary tools and materials for outdoor learning opportunities Design and construction of outdoor site planning, development and preparation of outdoor learning sites; secure a landscape company (Americans with Disabilities Act [ADA]-compliant spaces)	Number of students who participate in extended outdoor learning experiences Number of teachers who participate in extended outdoor learning experiences Number of outdoor residency team projects completed Number of teachers/staff receiving training/professional development in preparation for outdoor residency	Teacher confidence in designing outdoor learning experiences increases as they become nature-based innovators Students are active, joyful, and engaged participants in outdoor learning	Teachers make outdoor learning a common part of the curriculum Teachers innovate their curriculum in creative ways that provide greater access to learning outcomes for more students Student behavioral infractions decrease Students achieve academic growth and better learning outcomes	Students' social, emotional, academic, and physical development thrive Physical and mental health improves while communities come together in nature-based learning partnerships A foundation of environmental stewardship is built

[28] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

The Camden-Rockport *Out and About: The Outrageous Outdoors!* learning model is innovative and responsive to student needs for the following reasons:

1. **It cultivates and channels the natural curiosity and energy of young students in productive ways.** As one school administrator put it, "You don't have to be in school to learn." School staff noted this is especially important because elementary students are at a pivotal age when they are not yet conditioned how to think and how to structure their thinking, but instead, let their curiosity drive what they learn. A PreK teacher shared that the learning model is responsive to the way PreK students experience and process their environment. She said that "4-year-olds learn in a very sensory way—there's lot of running and heavy motor work done throughout the day, which is easier and less disruptive to do in the woods rather than the classroom. They are actually calmer outside." By and large, students indicated (through focus group discussions or naturalistic observation) that they prefer outdoor learning to the classroom learning because recreational activities (e.g., exercise, outdoor games) enhance their learning experience. As one student put it, "We're playing games and we're learning science at the same time."

INNOVATIONS

- Channels curiosity and energy into productive activities
- Focus is on learning rather than success or failure
- First program of its kind in Maine
- Promotes environmental stewardship
- Supports long-term educator development

2. **It centers the process and reasons for learning.** A community partner at Tanglewood shared how this has happened for third-grade students during outdoor STEM activities: "We're really emphasizing the *learning,* as opposed to success or failure. So, when something doesn't go as you expected, then what did you learn from it? It really helps set the state for students being able to persist and appreciate the process of learning and think deeply into the reasons *why* they're doing things." The community partner provided a compelling illustration of this shift: "There was a student, and it was apparent that they typically get frustrated when things don't go well. And the student built a boat . . . and it kind of just tipped over. And this kid takes a deep breath and he said, 'OK, I need to make my mast wider.' So, just like that, he changed his thinking process and wasn't worried about whether he succeeded or not."

3. **The nature-based PreK program is the first public school PreK program in the state to be facilitated almost completely outdoors.** Even though Camden-Rockport teachers had been incorporating outdoor learning into the curriculum for years before the RREV award, this is the first time students are spending a significant part of their school day outdoors. The nature-based PreK program[29] at Camden-Rockport is the first of its

[29] It is important to note that the PreK program at Camden was not created through the use of RREV funds; however, the RREV funds have contributed significantly to the development of the PreK program through the creation and enhancement of outdoor learning spaces for PreK students.

kind in Maine public schools that is facilitated completely outdoors. A PreK teacher said, "We have 4-year-olds who come and spend their entire day outside, and they're fully clothed for that kind of play, rain or shine." This program also uses a very adaptable curriculum that is not scripted. One of the PreK teachers shared that while there are some place-based PreK curricula, they were not an appropriate fit for what Camden-Rockport wanted to do. "We really want to go with what the seasons are showing us and what the kids are interested in; yesterday, slugs came up as a huge interest. I don't want to derail their fascination by saying 'Well, the curriculum says that on Tuesdays, we have to do this. We look closely at what the children are fascinated by.' "

4. **The model promotes environmental stewardship and a sense of community.** Camden-Rockport staff and community partners emphasized that connecting students with nature and the environment fosters a sense of place in the community. One community partner from conservation group Maine Coast Heritage Trust said, "Connecting kids with their own space will allow them to have more security and understanding of why it's important to be a good citizen. That's what's so huge about this [learning model] in the broader sense." A Camden-Rockport teacher explained, "This is giving students an opportunity to develop love and appreciation for the outdoors. It will help them develop a sense of place and civic attitude."

5. **The model's residency approach supports long-term teacher growth and development.** Throughout the 2021–2022 academic year, teachers partner with an expert to co-plan and co-facilitate student learning activities. The experts provide direct instruction in their identified areas of expertise. Camden-Rockport staff believe this residency model will provide the expertise, support, and confidence teachers need to make outdoor learning a common part of the primary education curriculum. One school administrator explained, "It benefits students and it benefits staff. When you interact with experts, it only serves to enhance the skills of staff. The intention is not to hand students off to an expert—it's to work in partnership."

Implementation of learning model

Student identification and recruitment

Camden-Rockport believes all students benefit from outdoor learning. This project, therefore, is geared toward all students in grades PreK–4, including those in special education programs. All staff members will participate in the training and have opportunities to utilize expert residents as part of the residency model. This will impact approximately 380 students and 30 teachers.

Staffing

To facilitate the residency approach in this learning model, Camden-Rockport created two Outdoor Liaison positions. The roles are paid a stipend and have been filled by Camden-Rockport staff (a school counselor and a multi-age classroom teacher) who work with teachers to identify local experts to collaborate with in each grade level. The liaisons connect teams with community partners that can help enhance a project and deepen student learning. One liaison serves as the point person for the primary grade levels (grades PreK–2, plus the multiage K–2 program) and the other liaison serves as the point person for the intermediate grade levels (grades 3 and 4, plus arts, music, and physical education teachers).

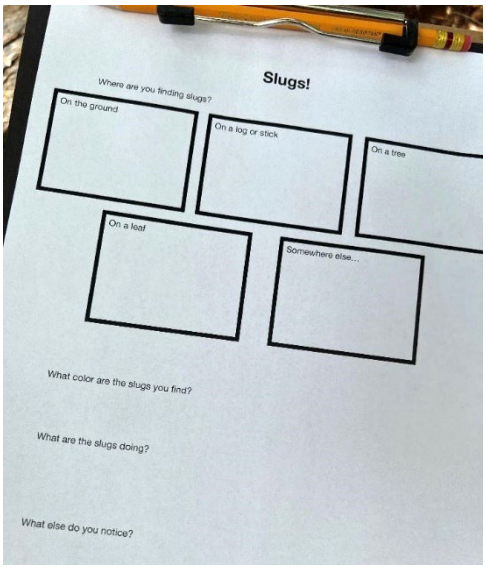
Community partnerships

The success of this innovative learning model hinges on building and maintaining a dense network of community partnerships. Through partnering with local and regional outdoor organizations and experts in the field, Camden-Rockport can create outdoor learning spaces, provide training opportunities for staff, and deliver innovative programming that will benefit all its students. For example, Camden-Rockport has a partnership with Tanglewood, a 4-H summer camp and learning center located approximately 10 minutes from the elementary school. This year, Tanglewood hosted three outdoor experiential learning visits for third graders. Tanglewood staff worked with teachers to ensure that each visit was aligned with Next Generation Science Standards. Through the Outdoor Liaisons, Camden-Rockport teachers are connected with a diverse array of local and regional experts who provide the expertise, support, and confidence teachers need to seamlessly integrate outdoor learning into the curriculum.

Students' spontaneous interest in the activities of slugs inspired their teacher to weave this line of query into class activities.

Infrastructure

The global supply chain disruption has caused delays in building key outdoor infrastructure necessary for outdoor learning during the initial months of the project. For example, one teacher shared that at the start of the school year, the playground was not complete due to lumber shortages and delays in receiving other important materials. Another teacher noted that the woods were not cleared entirely to create the outdoor classroom for the PreK program. By the spring, much progress had been made on the construction of outdoor learning sites.



Outdoor Learning Coaching

As noted, Hurricane Island facilitated a mandatory 2-day summer institute on professional development for all Camden-Rockport faculty to help move teacher competency in outdoor learning from "good to great." Coastal Mountains Land Trust also provides ongoing coaching and support to teachers throughout the school year. Several Camden-Rockport staff noted that one of the Coastal Mountains Land Trust coaches took a new position midway through the school year, which was a temporary setback; however, another coach was hired soon after and Camden-Rockport teachers were able to establish a strong relationship with her.

Outcomes

Teachers are growing their confidence to engage in outdoor learning with their classes. As noted above, Camden-Rockport staff has been receiving ongoing coaching from Hurricane Island to help support teachers in growing their confidence for conducting outdoor learning. This coaching has been instrumental. The assistant superintendent shared, "We've found that the greatest fear that teachers have is kids running away; we're trying to work with those who have been reluctant to get outside because of that." A PreK teacher said, "I think, for any group who is going to do this, I think having that role model, having a mentor—it makes an enormous difference in getting you like comfortable in the outdoors." However, some teachers said that while this support has been helpful, they would feel more comfortable if they were able to have another teacher or adult join them when going outside. One teacher said, "That is one of the things that almost discourages me at times—taking my 21 second graders, and a lot of them are really active kids, outside. It's something that worries me for sure, I would feel so much more comfortable going out with another adult." Another teacher explained, "Even though we have been trained in outdoor learning and outdoor experiences, having someone on site that is even more of an expert [would be helpful]; almost like a specialist teacher." In addition to growing confidence for going outdoors during the school day, there were mixed findings regarding teacher confidence for designing outdoor learning experiences and aligning those experiences to curriculum standards. During fall 2021, several teachers remarked that one of the challenges in creating outdoor learning opportunities was thinking about how to clearly connect outdoor experiences to curriculum standards. Community partners have played a pivotal role in helping teachers align outdoor learning experiences to learning standards. A community partner at Tanglewood shared that she was able to help third-grade teachers think through how to align all the outdoor learning activities for third graders to Next Generation Science Standards—"everything they wanted, we were able to figure out how to do it," she said.

Students are active, joyful, and engaged participants in outdoor learning. Students, parents, teachers, school administrators, and community partners all emphasized how student attitudes toward and engagement with learning have transformed over the course of this school year. Results of the student survey (Exhibit 3) showed that 92 percent of Camden-Rockport students indicated they were glad to have gone outside to learn this year, and 81 percent believed that going outside helped them learn this year. According to school administrators and teachers, the outdoor learning pilot project is contributing to a paradigm shift in terms of how students think about education and learning. Numerous examples of this were shared during the spring 2022 site visit. A multi-age program teacher stated that she observed high attendance this school year, particularly during the 9-week residency. A parent of a second grader described her daughter's enthusiasm for outdoor learning: "She talks a lot about how they've been doing a lot of work with Chewonki and Aldermere Farm and she gets really excited about it, sharing little facts she's learned about cows and little tidbits of information she has learned. She just seems really motivated and excited about it." A PreK teacher shared that there has been a marked shift in PreK students' enthusiasm for schoolwork, noting that at the beginning of the year, students did not enjoy keeping a field journal to note their observations of the outdoors. However, as PreK students gained more exposure to the outdoors and began using their senses to understand their natural environment, enthusiasm for scientific thinking began to build. She said, "Now, a lot of them are like, 'We need to put that in our field journal! We need to make sure we take pictures of this.' It's so wonderful to see." During an observation of the PreK classroom, a parent volunteer of one of the students said she "couldn't be more pleased" with

the PreK outdoor learning program. She shared that she enjoys volunteering as a classroom aide whenever she is able and believes that the outdoor learning experiences PreK children are having at this early stage in life will help build a love for nature. As well, she observed, "I think this has also been good for their overall mental health."

EXHIBIT 3. SUMMARY OF STUDENT SURVEY RESULTS (N=63)

Survey Item	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I went outside to learn this year.	92%	5%	3%
Going outside helped me learn this year.	81%	8%	11%
Overall, I liked my experience going outside to learn this year.	92%	5%	3%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	80%	10%	10%

Outdoor learning shows preliminary promise for improving behavioral and socio-emotional issues for students. One of the goals identified in Camden-Rockport's application for RREV funding was to experience a 20 percent reduction in behavioral infractions during the first year of the outdoor learning pilot program. Official data on behavioral infractions as reported in the School-Wide Information System (SWIS) showed a slight decrease in referrals for behavioral incidents from 249 in the 2017–2018 academic year to 240 in the 2021–2022 academic year. Of particular interest, the fourth grade had the lowest number of behavioral incidents reported during this academic year (n=13). With the exception of the PreK program, fourth graders engaged in the most outdoor learning this school year. However, caution should be exercised in interpreting this figure as the association between outdoor learning and behavioral infractions is likely influenced by several other unaccounted-for variables. The assistant superintendent and principal both noted the challenges of coming back to in-person schooling following an extended period of social isolation for many students and their families. The assistant superintendent for MSAD #28 said, "I think we're still seeing the residual effects of that period come out in student behaviors this year." Data from teacher interviews suggests, however, that student behaviors have shown improvement over the course of the school year. For example, a PreK teacher noted that many PreK students did not have a lot of social interaction prior to enrolling at Camden-Rockport. She said, "This group came in here pretty anxious. At the beginning of the year, I had some really disruptive behaviors. I had some flight risks. And the way this group came together as a team, I don't think I've ever had a class [where] that has happened so early."

Students have demonstrated academic growth during the 2021–2022 school year. By spring 2022, more than 80 percent of the Camden-Rockport student body demonstrated growth in their RIT score on at least one NWEA assessment. Specifically, 85 percent showed RIT growth in math, 83 percent showed RIT growth in reading, and 87 percent showed RIT growth in language usage. One of the PreK teachers has observed growing interest in STEM-related topics among the PreK students. During the PreK team's residency with Chewonki, she observed students making connections between what was learned across different class days.

Third-grade students learn about forces and motion through a kite-flying activity at Tanglewood.

"I have a couple kids that I really honestly believe are going to stick on this path of science because they're just so fascinated by all of these different outdoor experiences."

The majority of parents are aware of *Out and About: The Outrageous Outdoors!* and are satisfied with their children's experiences with outdoor learning. Results from the family survey (Exhibit 4) showed that 75 percent of parents knew that Camden-Rockport was implementing an outdoor learning program this year, and parents were either somewhat satisfied or very satisfied with the availability of responsive education activities offered through Camden-Rockport. Further, 90 percent of parents either somewhat agreed or strongly agreed with the statement, "I am satisfied with my child's experience with outdoor learning," and 98 percent of parents said they would recommend this program to other parents. During a focus group with parents of elementary school students, all parents stated that their children had shared some of their outdoor learning experiences with them, including trips to Tanglewood and Aldermere Farm. As well, parents shared that the Camden-Rockport teachers have been consistent in providing regular email updates about what students are learning and how outdoor time and use of outdoor learning spaces is connected to that learning. Some parents have gotten involved with the program as classroom volunteers. A community partner at Tanglewood shared that she has observed several second-grade parents attending field trips with their children: "We have parents who really treasure that time with their children."

EXHIBIT 4. SUMMARY OF FAMILY SURVEY RESULTS (N=86)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 87%
	Moderately important – 13%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 45%
	Somewhat satisfied – 34%
	Neither satisfied nor dissatisfied – 14%
	Somewhat dissatisfied – 8%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 46%
	Slightly more opportunity – 25%
	About the same as last year – 19%
	Slightly less opportunity – 3%
	A lot less opportunity – 7%
Would you recommend this program to other parents?	Yes – 88%
	No – 2%

Future plans

Outdoor learning is the long-term vision for Camden-Rockport Elementary School. School leadership emphasized that this pilot project is the beginning stage of a longer-term strategy to institutionalize outdoor learning as a teaching and education standard for all students (i.e., outdoor learning opportunities for every student, every year). In the near future, part of Camden-Rockport's hiring process will be to understand candidates' teaching philosophies and whether these include outdoor learning. The school principal described how Camden-Rockport will be shifting their vision moving into the future: "I can use the analogy of a boat. I'm going to just shift the tiller like 2 degrees, and you're not going to feel a huge lurch. But over time, we're going to go into a very different place from where we're headed right now. So, just know that my support with resources—whether that's time, money, and so forth—is going to go in that direction. And I'm going to be hiring people who are inclined to go in that direction."

Increased parent engagement with outdoor learning is a goal for next school year. School administrators mentioned there has been overall low-level parental engagement this school year. Much of this was attributed to the pandemic; for instance, the school principal noted that the pilot program was the first opportunity to bring parent volunteers back into the school. "They were shut out of our school for a year and a half, but we are trying to welcome them back in with open arms." As noted previously, the nature-based PreK program attracted a number of parent volunteers throughout the 2021–2022 school year. The PreK teacher said her goal is to engage more families with class activities so that parents become more comfortable with being outdoors with their children.

Lessons learned

Teacher response to outdoor education is variable, but patience, peer encouragement, and structured support can help hesitant teachers become more engaged. One administrator observed a split in teacher reaction to outdoor education: some are energized by the opportunity while others find it intimidating. Whereas some teachers take part in outdoor learning daily, there are still teachers who engage on a minimal basis. One administrator attributed this to COVID-19, saying, “Some teachers do not have the capacity to take on new things when there is pandemic fatigue.” He also said that while the outdoor learning model is energizing for some teachers, other teachers find it intimidating, which is why the professional development and ongoing coaching support from Hurricane Island has been so important. As of late spring 2022, all students had at least one outdoor learning opportunity during the 2021–2022 school year. As the principal put it, “Patience is key in all of this.” The assistant superintendent also emphasized the importance of meeting teachers where they are at, as opposed to prescribing a uniform approach to outdoor learning for all teachers: “I think if it's a top-down directive, it usually will not be successful. So, we have to find ways to meet teachers from where they're at. It's not gonna look the same for everybody.” Teachers and administrators emphasized that ongoing coaching support (such as that provided by Hurricane Island and Coastal Mountains Land Trust) has been key to building this confidence for outdoor learning.

The introduction of new staff can cause confusion and frustration when roles are not clearly understood by all parties. A key project component is the introduction of the Outdoor Liaison roles, which are responsible for helping teachers and classrooms connect with community partners that can help enhance outdoor residency team learning projects and deepen learning for students. As envisioned during the pilot development, teachers at each grade level are responsible for brainstorming and developing a project plan, at which point the liaison reviews the plan and develops a partnership plan to ensure the team is connected to the appropriate experts to support the project. However, there has been some confusion about the specific function of this position. Both liaisons described situations in which teachers approached them to help brainstorm a project plan that had already been defined. As one Outdoor Liaison explained, “We are not helping them brainstorm. They are coming to us when they’re done, and they have an idea and it is set in stone.” By spring 2022, the role of the Outdoor Liaison appeared to be better understood as teams began to put their residency and project-based learning plans into action.

Classroom management outside demands more attention and resources than some teachers expect. While teachers praised the benefits of outdoor learning and the importance of getting students out of the classroom, it does present unique challenges from a classroom management perspective. Because outdoor spaces have boundaries that are less defined compared to a traditional classroom, one teacher reported that she has had a few students run away on occasion. Fortunately, this teacher has been able to access the school behavioral specialist to help support those students. Additionally, Camden-Rockport has been able to install signs and snow fencing to mark boundaries, which has also been helpful.

Outdoor learning may be more conducive to certain academic areas compared to others. Generally, teachers believed that while outdoor learning was conducive to science classes, it is more challenging to create outdoor learning experiences in other classes (math, language arts, and so on). One teacher commented specifically on this issue in her class, saying, “Being outside in the fresh air is lovely, but that doesn't necessarily enhance your reading and your

writing or your math lessons. But it certainly enhances your science. We're studying the Maine woods and . . . that totally goes hand-in-hand with being outside and seeing that and doing it. So for our grade, we certainly see the value in doing that for science and social studies. We are not at the place where we feel like we are going to bring our kids out all the time just to be outside to read a book or write and do math." Another teacher corroborated this challenge, stating, "There are math lessons I would never want to bring outside—it's just that I need my technology, the kids need materials, we need certain tools." Generally, teachers believed that science is an easy "starting point" for teachers to think about how to create innovate outdoor learning experiences for students.

Community partnerships are key for helping bridge connections between outdoor learning and curricular standards. One of Camden-Rockport's community partners characterized outdoor learning as an approach that is "more messy and less structured" compared to traditional classroom approaches. Indeed, several teachers shared in the fall of 2021 that creating outdoor learning opportunities that are appropriately aligned with lesson plans and curriculum standards was a source of anxiety that stymied participation in outdoor learning—at first. Community partners have been instrumental in supporting teachers in designing responsive outdoor educational experiences for students. Tanglewood designed an outdoor site visit series in the spring that included activities aligned to Next Generation Science Standards in the specific area of forces and motions. During these visits, students designed their own miniature sailboats, kites, and compasses—all toward the goal of understanding the effects of balanced and unbalanced forces on the motion of an object. Tanglewood also hosted a similar site visit series for fourth graders, with outdoor activities that were aligned to earth system science standards. According to Tanglewood staff, once teachers shared the specific standards that needed to be met for the school year, designing responsive outdoor learning activities was not challenging. One employee said, "Once we had the standards, we were able to translate everything."

Providing equal opportunities for outdoor learning shows promise for overcoming education disparities. As noted, this pilot project was characterized as an equity opportunity for students at Camden-Rockport. The findings from this first year of the pilot project show that progress is being made in this area. For example, Camden-Rockport was able to provide equipment and outwear for *all* students to fully participate in outdoor learning this year, thus eliminating barriers to participation among low socioeconomic status (SES) students who otherwise would not have been able to afford these accoutrements. Disparities in academic performance may also be attenuated via outdoor learning. As noted earlier, more than 80 percent of the Camden-Rockport student body demonstrated growth in their RIT score on at least one NWEA assessment during the 2021–2022 school year. One of Camden-Rockport's goals was to observe at least a 10 percent increase in scores among low-SES students. At this time, this data is not available, but it will become available in fall 2022. It will be crucial to analyze the academic performance trends for this sub-group of students to determine how outdoor learning has influenced this specific outcome.

Individual Adopter School – Agnes Gray: Year 1 Case Study

Maine School Administrative District #17, Region 6 – Western Maine

Background

Agnes Gray Elementary School ("Agnes Gray") is one of eight elementary schools in Maine School Administrative District #17 (MSAD #17). Located in West Paris, the school serves 135 students in PreK through 6th grade. The National Center for Education Statistics (NCES) classifies Agnes Gray as a rural school, and there is one classroom per grade for PreK–6th. The proportion of students identified as economically disadvantaged (62 percent) is substantially higher than the state average (41 percent) (Exhibit 1).[30]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU*	Maine
Number of Students	3,376	178,860
Locale Classification	Rural	N/A
Students Identified as White	93%	88%
Students Identified as Economically Disadvantaged	56%	41%
Students Eligible for Free/Reduced Price Lunch (Agnes Gray Elementary School)	66%	44%
Students Identified with Disabilities	19%	18%
Student/Teacher Ratio	13.03	N/A
Median Household Income	$51,168	$57,918
Adults with a Bachelor's Degree or Higher	22%	32%
Adults in Labor Force	84%	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

*SAU stands for school administrative unit

Development of pilot project

In August 2021, Agnes Gray received a Rethinking Responsive Education Ventures (RREV) award ($249,961) to develop and implement an outdoor education program called *Teaching Outside: The Box* in the 2021–2022 school year. This program was developed by a two-person pilot team consisting of the school's principal and a 5th grade teacher who participated in the Spring 2021 Innovative Mindset Pilot Development (IMPD) course. A pilot team member explained they were interested in developing a program that addresses the social context at the

[30] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018-2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019-2020 school year.

school, where about 25 percent of students receive social services and many students have had adverse childhood experiences (ACEs). According to the team member, they entered the IMPD course with the intention of developing a program to help students "cope with trauma they've experienced in healthy ways"—especially through outdoor education. The pilot team noted that the IMPD course helped them become better thinkers and advocates for outdoor education as a strategy for addressing and supporting students with ACEs.

Prior to the RREV funding, Agnes Gray students already had access to some outdoor education areas and participated in programs such as Forest Fridays, which brought students outside for one-off lessons. However, what distinguishes *Teaching Outside: The Box* from these earlier initiatives is the more structured and intentional approach in providing frequent outdoor learning opportunities for all students.

Program description

The *Teaching Outside: The Box* pilot (Exhibit 2) is a holistic strategy to integrate outdoor learning across schools within the district. Agnes Gray's innovative education model consists of two complementary components that are intended to support a schoolwide culture of outdoor learning in which teachers regularly find ways to bring students outside and integrate these spaces and approaches throughout their teaching.

The first component of Agnes Gray's model is a new full-time Outdoor Learning Coordinator (OLC) position. The purpose of this position is to create, expand, and support the adaptation of a project-based curriculum to an outdoor education setting across the entire school. To do so, the OLC is responsible for adapting curriculum resources to outdoor lesson formats, providing professional development on facilitating outdoor instruction to other staff at Agnes Gray, and co-teaching outdoor lessons with classroom teachers. The OLC works directly with classroom teachers in the planning, facilitation, and assessment of outdoor lessons, and led or co-led individual outdoor learning experiences. The OLC is also intended to be a resource for other schools in the district by helping teachers develop and adapt project-based outdoor education lessons and activities.

The second component uses RREV funding to provide for more physical infrastructure at Agnes Gray, including the construction of a yurt that can be used for classes and activities throughout the year, even during cold or inclement weather. The program also establishes an Outdoor Volunteer Corps, which will provide parents and other community members a structure to help with the program. For example, volunteers will chaperone outdoor experiences, leverage their personal connections to potential partners such as Maine Audubon, and manage the logistics of an outdoor gear lending library.

Taken together, the new infrastructure and OLC position allow for an expanded, project-based curriculum of outdoor education. This curriculum is focused primarily on outdoor learning opportunities that explore the school's natural surroundings. The curriculum has expanded beyond ecology to include other subjects, including science, technology, engineering, and mathematics (STEM).

EXHIBIT 2. PROJECT LOGIC MODEL[31]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ Roberts Farm Bryant Pond 4-H Oxford Hills Comprehensive High School/ Oxford Hills Technical School Maine West Volunteers Community members	Project-based, integrated curriculum units for PreK–6 Coaching for teachers in their work instructing outside Professional development (PD) for teachers Infrastructure that supports teachers' and students' work outside Communication of successes and learning to support other schools Visits to site from other schools Outdoor Volunteer Corps to support teachers and students Gear lending library	Development of unit plans that build on existing district curriculum The coordinator models, observes, and provides feedback to teachers Coordinator provides PD at staff meetings around the district Coordinator creates and manages the structures that facilitate outdoor learning Coordinator develops a variety of methods (website, presentations, etc.) to communicate and celebrate successes Coordinator facilitates site visits with schools and community partners Coordinator will train and schedule volunteers Coordinator manages gear used by teachers and students	Availability of units and materials for outdoor teaching Teachers gain confidence and knowledge needed for teaching outside Teachers are supported in the theory and practice of outdoor education Infrastructure that supports outdoor learning is in place Schools, community, and district are aware of successes at Agnes Gray in order to adopt similar structures Schools and community partners learn first-hand about Agnes Gray's outdoor program Teachers and students receive the support needed to take learning outside Gear lending library with outdoor equipment that can be used districtwide	Through integration of outdoor learning into their school day, students at Agnes Gray are: • More engaged in their learning • Less likely to be referred for behavioral issues • More likely to meet or exceed grade level expectations in reading and math • More prepared for academic and social challenges due to increased motivation and self-esteem	Through a regular outdoor learning approach, students' social and emotional needs are met, allowing them to have more positive interactions with their school community as well as improved academic engagement and success

[31] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

Agnes Gray's *Teaching Outside: The Box* program is innovative and responsive for four main reasons:

1. **The OLC role is responsible for maximizing the utility of the physical infrastructure.** Although many schools in Maine have outdoor facilities or grounds where students can learn outside, a distinguishing feature of Agnes Gray's RREV program is the way it leverages the OLC position to ensure these resources are used to their full potential. The presence of the OLC, a staff member responsible for supporting outdoor learning across the school, was intended to facilitate and provide an impetus for teachers in all grades to consider how to integrate outdoor education into their overall teaching approach. Throughout the year, teachers were able to develop their outdoor learning facilitation skills while actively teaching their classes.

2. **It created a whole-school strategy for outdoor education**. What separates *Teaching Outside: The Box* from Agnes Gray's existing outdoor education programs is that it provides a structure for sustained *schoolwide engagement* with outdoor education, in contrast to smaller, classroom-level programs. Students at all grade levels regularly complete lessons outside, which means students at Agnes Gray will experience outdoor learning throughout their entire time in elementary school. By establishing outdoor learning as a consistent element of their early education, Agnes Gray's model will allow students to see the outdoors as a natural part of their schooling, rather than a one-off, rare occasion, or something that only certain children get to experience depending on their individual teachers' interests. Moreover, the presence of the OLC, a staff member responsible for supporting outdoor learning, is intended to facilitate and provide an impetus for teachers in all grades to consider how to integrate outdoor education into their overall teaching approach.

   INNOVATIONS
   - Complimentary use of personnel and infrastructure
   - Whole-school strategy
   - Engage community assets
   - Targeting students with ACEs

3. **Community assets and programs are integrated into the pilot.** The local community has an abundance of natural assets, including rivers and woods, which the school has been using for many years in outdoor teaching. In fact, the school already has three pavilions and a cabin used as outdoor learning spaces, and regularly implements educational programming, such as Forest Fridays,[32] in which students participate in one-off outdoor lessons. According to the implementation team, these programs are popular with students and teachers, but can be a "logistical nightmare" and are not necessarily integrated into the broader curriculum. The pilot builds on these assets by incorporating them into a more cohesive program with a dedicated staff person who is responsible for coordinating activities and ensuring lessons are meaningfully integrated with content standards.

[32] See the *Sun Journal* article Teaching 'outside the box' (in West Paris).

4. **Activities specifically target students who have ACEs**. One of the key responsibilities of the OLC is to develop outdoor education activities that boost students' engagement, self-esteem, and motivation. By hiring a full-time staff member with expertise in outdoor education, the pilot program provides teachers with additional support to develop and implement creative and individually-tailored ways to engage students who struggle in traditional classroom settings. Further, the professional development provided by the OLC provides ongoing opportunities to experiment with new ways to support students through outdoor education.

Implementation of learning model

Infrastructure

During Year 1 of pilot implementation, the school leveraged the pre-existing outdoor learning spaces while making arrangements for the construction of a yurt onsite. The school regularly utilized used the cabin and three pre-existing pavilions, and created a hammock area in the woods to provide more spaces for students and teachers to use while learning outdoors. However, the construction of the yurt has been slower than anticipated, which the pilot team attributes to global supply chain bottlenecks of construction materials. During Year 1 this structure was approved and ordered and will be assembled before the 2022-–2023 school year.

Staffing

Despite being a key innovation of the pilot model, staffing challenges disrupted pilot implementation during Year 1. First, a member of the pilot development team took an unexpected leave, which caused delays because it meant one person had to fill what was planned as a two-person role. Second, Agnes Gray faced schoolwide staffing shortages in fall 2021, causing the OLC to spend substantial time teaching other classes instead of building the outdoor learning curriculum. Third, the ongoing pandemic made staffing absences unpredictable throughout the school year. Fourth, turnover at the district level caused a backlog of background checks, which delayed the formation of the Outdoor Volunteer Corps, and the ongoing pandemic and staff changes at the district level limited the number of visitors the school could have at any given time.

Outcomes

Students and teachers perceive outdoor learning to have positive effects on students' focus, especially among students with ACEs. Students in focus groups across grade levels reported enjoying outdoor learning and looking forward to learning outside during the day. Particularly, students enjoyed the ability to move around, get fresh air, and use the constructed outdoor spaces during academic lessons. Though students across grade levels identified that distractions—such as loud noises or other classes at recess—could disrupt learning, focus groups indicated that it is easier to learn while outside. The majority of students provided positive feedback on an anonymous survey (Exhibit 3). In response to an open-ended question about their overall experience, one student said, "My favorite thing about learning outside is the fresh air, it helps me think." Another student

> "My favorite thing about learning outside this year was everything was more engaging and it was more hands on . . . ."
>
> Student

said, “We can be more spread out” in the outdoor spaces and noted they can use the hammock spaces for reading. Further, teachers reported greater engagement and fewer disruptive behaviors during outdoor lessons. Teachers identified that students with ACEs who might otherwise struggle in a classroom context seemed calmer and more attentive while learning outdoors.

One of the teachers observed, “My kids who could be really quiet in the classroom, all those other things, just the prevalence of negative self-talk—you get them outside and all of a sudden, they’re different kids. This is their world and this makes sense to them. Where they only felt failure when they’re inside, so that’s been really good. The relationship is huge and them feeling another space that they can be more successful in doesn’t feel like school.”

EXHIBIT 3. SUMMARY OF STUDENT SURVEY RESULTS (n=37)

Survey Item	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I went outside to learn this year.	78%	5%	5%
Going outside helped me learn this year.	68%	16%	5%
Overall, I liked my experience going outside to learn this year.	73%	14%	3%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	70%	14%	5%

Teachers reported a shift in school culture to be more willing to and interested in delivering instruction outside. This pilot has allowed teachers to develop their outdoor facilitation skills, build the systems necessary to smoothly transition classes to outdoor learning, and create a curriculum bank with lessons specifically designed for outdoor learning. Parents at the school also noticed the impact of the pilot on their students’ learning and experience at school (Exhibit 4, next page).

Measuring student engagement

The pilot systematically measured student engagement during outdoor lessons through the assistance of an outside observer. This observer identified target behaviors to track during lessons including on-task behavior, paying attention, and asking questions. Lesson observations occurred once a week with the 1st grade class throughout the first year.

The outside observer noticed, “In general [the pilot is] a positive effect. There’s no negative to being outside with kids. And so it’s just trying to figure out how to do it in a way that’s consistent, or that is safe. In a way that lends itself to authentic learning experiences.” The results of the year-long observation will be reported later in summer 2022.

EXHIBIT 4. SUMMARY OF PARENT SURVEY RESULTS (N=16)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 6%
	Moderately important – 94%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 69%
	Somewhat satisfied – 25%
	Neither satisfied nor dissatisfied – 6%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 56%
	Slightly more opportunity – 31%
	About the same as last year – 6%
	No response – 6%
Would you recommend this program to other parents?	Yes – 88%
	No response – 12%

Future plans

In Year 2, the OLC will work with teachers from other schools in the district to expand the pilot program. Though still be based at Agnes Gray, the OLC will travel to other schools within the district or in the area to help more teachers develop the skills necessary to facilitate learning outside. The OLC currently envisions week-long focuses with teachers in which, as a team, they will plan, execute, and reflect on an outdoor lesson. These lesson plans will both utilize and add to the existing bank of adapted curricula. Teachers at other schools will have access to these learning resources outside of the time they spend directly working with the OLC.

Making the case for the adoption of the OLC as a permanent, districtwide position. As the scope of the pilot expands to focus on professional development opportunities across the district, so does the need to build a case for why an OLC should become a permanent position within the district. The pilot team intends to assess whether this position is necessary for enabling outdoor education in schools throughout the district. The hope is that outdoor learning will facilitate the desired changes in lesson delivery districtwide and, as a result, improve student social and emotional wellbeing while maintaining or exceeding student academic outcomes.

> "[Kids] will often say this has been the best part of my day, it's this time we've spent outside."
>
> Outdoor Learning Coordinator

In Year 2, the yurt will be ready as an additional outdoor learning space at Agnes Gray. Over the summer, the deck will be constructed and the yurt will be delivered and assembled. This will provide another outdoor learning space in addition to the three pavilions, cabin, and orchard area currently in use. Further, the yurt will provide a necessary outdoor structure that can be used during inclement weather.

Lessons learned

A staff position devoted to outdoor learning can help teachers feel more comfortable using outdoor space. During interviews, teachers commented that before the pilot year, they were less likely to use outdoor spaces because of the logistical challenges, such as bringing materials and supplies, concerns about classroom management outside, and uncertainty about how to integrate core content with outdoor activities. However, since the OLC position was created, teachers have felt more confident about how to use the outdoor assets available to them and feel more prepared to deliver lessons independently outside. For example, one teacher explained that having the OLC position has "been huge [because] we can manage the space and manage where everybody is going. Expertise on how classroom management looks a little bit different outside." This teacher explained that the OLC helped teachers make better use of the space and feel more comfortable taking young students outside on a regular basis.

Establishing clear behavioral expectations early creates an environment for flexibility and fun activities throughout the year. The OLC explained students who have not had experience learning outside the classroom sometimes struggle to understand behavioral expectations when they are outside, which is why time was spent up front to establish how to behave during outdoor learning time. According to the OLC, setting these expectations early creates a firmer foundation for fun activities. For example, students have enjoyed hikes, donned donated rubber boots to play in a nearby stream, and planted seeds that grow well during winter. During a site visit, we observed that students clearly understood the boundaries associated with different outdoor spaces and adjusted their behavior based on the lesson type and procedures in outdoor spaces. During interviews with students, multiple students noted that there are often distractions while learning outside and it requires them to focus differently.

A whole-school outdoor education initiative requires systems and processes for coordinating outdoor space and supplies. A member of the pilot team said that logistical challenges have hampered outdoor education programs in the past, especially when multiple teachers had to coordinate to reserve space, materials, and time with community partners. In response to this challenge, Agnes Gray invested effort in creating simple and systematic processes for teachers to coordinate with each other. For example, after a teacher identified the challenge of returning to the classroom after realizing lesson equipment was missing, the school invested in designated clipboards and clipboard storage in outdoor learning spaces to ensure teachers will have the materials they need when using the space. During a site visit, we observed students packing materials in specific bags designated for classes to use in outdoor classrooms. Additionally, teachers were prepared with materials already set up for lessons by the OLC and extra materials should a student have forgotten or misplaced equipment.

District-level systems and support can help individual schools maximize resources. At the district level, a STEM educator was hired to facilitate experiential learning as part of a districtwide fieldtrip program to a local farm. The OLC and the STEM educator have been able to collaborate on content development. Students at a local high school helped develop outdoor learning resources, including building parts of the outdoor learning space. In Year 2, the OLC will work with different schools around the district so the team is currently planning to build relationships with teachers from other schools to expand the pilot to other campuses. To gage interest, the pilot team distributed a survey to district elementary school principals at the end of the 2021/2022 school year and they are using the feedback to plan for the expansion of the pilot in the fall.

Teachers may be more open to trying new approaches in subject areas that are not assessed through state standardized tests. During the fall 2021 semester, most outdoor lessons focused on science and social studies topics. Both teachers and community partners posited that teachers are more willing to experiment with new activities and approaches in these subjects because they are not included on statewide assessments for their grades. They contrasted this willingness to experiment with a greater hesitancy toward trying new approaches in tested subjects such as math or English.

Logistical adaptations help ease the transition to working outdoors. In addition to adapting curricula and professional development, teachers need logistical solutions to help meet the needs of students while learning outside. Teachers at Agnes Gray continued to use the strategy of having student bags specifically designed for taking their learning materials with them to outdoor classrooms. This system was first used as a response to the COVID-19 pandemic. In addition, having sheds nearby supplied with clip boards, white boards, extra materials for students, and any learning materials allows teachers to quickly address student needs without returning to their classroom. Teachers also used visual markers to designate the boundaries of outdoor spaces to ensure classes could be monitored by a single teacher and not disrupt other lessons occurring outside at the same time.

Practical considerations such as plumbing, electricity, and internet connectivity will influence the pace, location, and purpose of outdoor infrastructure. During the site visit, teachers and administrators described challenges that they anticipate facing while using the yurt, including lack of electricity, Wi-Fi, and running water. Pilot leaders are taking these challenges into consideration, but that consideration has caused delays for the construction and use of the outdoor space.

Individual Adopter School – Mt. Blue: Year 1 Case Study

Regional School Unit #39, Region 6 – Western Maine

Background

Mt. Blue Regional School District, regional school unit #9 (RSU #9), is a rural fringe[33] school administrative unit (SAU) 90 miles west of Bangor in Farmington that serves about 2,375 students, of whom 734 attend Mt. Blue High School ("Mt. Blue"). Co-located with Mt. Blue High School on the Mt. Blue Campus is the Foster Career and Technical Education Center (F-CTC), which is a regional learning center offering national certifications and college credits in 20 specific trades and skills, such as such as automotive technology, computer technology, and forestry.[34] And nearby is the University of Maine-Farmington campus, a public liberal arts college enrolling about 1,700 students. The region is also home to several outdoor recreation areas, including Mount Blue State Park and Sugarloaf Mountain. The demographic profile of RSU #9 shows a region with a lower median household income than the state average and a higher proportion of students identified as economically disadvantaged.

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	2,375	178,860
Locale Classification	Rural	N/A
Students Identified as White	95%	88%
Students Identified as Economically Disadvantaged	47%	41%
Students Eligible For Free/Reduced Price Lunch (Mt. Blue High School)	37%	44%
Students Identified with Disabilities	18%	18%
Student/Teacher Ratio	13.47	N/A
Median Household Income	$40,390	$57,918
Adults with a Bachelor's Degree or Higher	N/A	32%
Adults in Labor Force	N/A	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

In August 2021, Mt. Blue received an RREV award ($249,937) to develop and implement the *Oxbow Outdoor Pilot* program beginning in the 2021–2022 school year. A two-person pilot team—an English language arts (ELA) teacher from Mt. Blue and an engineering teacher at F-CTC—worked together to develop the pilot while participating in the Innovative Mindset Professional Development (IMPD) course through the University of Maine. According to the team, the inspiration for the *Oxbow Outdoor Pilot* program came from the school's Youth Expedition to Ignite (YETI) club, which has organized outdoor activities for Mt. Blue students for

[33] Rural fringe is one of 12 locale classifications assigned by the National Center for Education Statistics.
[34] The Foster Career and Technical Education Center

decades. The school's experience with the YETI club suggested outdoor education would resonate with students, but participation in the IMPD course helped the pilot team translate this experience into a more comprehensive program. Specifically, the team credited the IMPD course with helping them "step back and re-assess . . . the intent of this program," especially by helping them find evidence-backed ways to connect outdoor activities with ELA content. The team also noted the IMPD course helped them become better communicators with other stakeholders, especially school board members and district leaders. One team member said, "We learned how to sell [our] idea to board members," which was vital to building support and obtaining resources for the program.

The drainage pond behind the school used for practicing canoes.

Program description

The *Oxbow Outdoor Pilot* program is a semester-long ELA course for students in grades 11 and 12. There were 13 students enrolled in the program during the fall 2021 semester and 15 in the spring 2022 semester. The course is taught by a certified ELA teacher and includes a mix of classroom work—primarily focused on wilderness-related reading and skills such as mapmaking—and outdoor activities that complement the classroom work—such as woodworking, camp making, and canoeing. A pre-engineering instructor at F-CTC is a full member of the pilot team and advises on outdoor activities and their application to engineering concepts.

RREV funding provides for new outdoor education infrastructure that will be used in the program, including a new yurt near a pond adjacent to the school. The yurt will provide a non-traditional setting for classes and activities and will be surrounded by new pathways and trails to reinforce concepts from class. The RREV award also provides for a 21-passenger minibus and outdoor equipment for field trips, which will eventually include day trips as well as longer weekend trips to outdoor recreation areas. The pilot team is holding ongoing discussions on ways to involve other teachers in *Oxbow Outdoor Pilot* activities, including teachers who are licensed Maine Guides.[35] A member of the team noted that involving these teachers would grow a sense of ownership and commitment to the program across the entire school.

[35] The Maine Guide training program offers courses on various outdoor-related activities as well as first aid training.

EXHIBIT 2. LOGIC MODEL[36]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ and coaching Natural resources, including Mount Blue State Park and Sugarloaf Mountain The Foster Career and Technical Center (F-CTC) and the University of Maine-Farmington	Recruit a teacher qualified to teach an ELA course that connects classroom work with local resources Create connections with F-CTC to advise on outdoor activities and their application to engineering concepts Create a course that integrates local resources, including outdoor activities and skills Construct outdoor education infrastructure, including a yurt Obtain a bus to transport students and equipment for outdoor field trips Engage teachers and volunteers for outdoor activities	Teacher recruited F-CTC advisor recruited Course curriculum developed Number of students enrolled in course Outdoor infrastructure completed Number of teachers who participate in field trips or other outdoor activities Number of field trips	Improved staff use of local resources Strengthened connections between Mt. Blue and local institutes of higher education Students demonstrate academic growth Students demonstrate socio-emotional learning	Teachers incorporate local assets in their teaching practices Improved graduation rates Students feel connected to their community	Mt. Blue capitalizes on local assets Mt. Blue students appreciate the outdoors and the assets of their community

[36] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

The *Oxbow Outdoor Pilot* program is innovative and responsive for three main reasons:

1. **It strengthens collaboration between the high school and local institutes for higher education**. Mt. Blue High School is co-located with F-CTC on the Mt. Blue Campus, but these are considered two separate institutions operating on one campus. According to a member of the pilot team, the RREV pilot has provided an opportunity to strengthen collaboration between the institutions by establishing common purpose and structure on the campus. During the first year of implementation, the *Oxbow* program was primarily administered through the high school, but starting in 2022–2023 the program will become a career and technical education (CTE) course titled Outdoor Leadership administered by F-CTC. According to a member of the pilot team, "This new arrangement will make it much easier for students from other schools to participate," while further strengthening institutional connections between Mt. Blue High School and F-CTC. For example, collaboration between the institutions related to the RREV pilot will offer students opportunities to earn credits and certifications such in wilderness first aid and CPR based on their participation in the *Oxbow* course. In addition to strengthening the relationship between Mt. Blue and F-CTC, the pilot has also been an impetus to strengthen Mt. Blue's relationship with the University of Maine. Specifically, students in the *Oxbow* program will earn 3 credits in Outdoor and Adventure Activities through the Early College Program.

2. **It leverages the community's unique outdoor assets to support student academic growth and mental and emotional health**. The program offers an opportunity to take advantage of Mt. Blue's unique natural surroundings for activities—such as canoe trips, hiking trips, and team-building exercises—that promote student academic and non-academic outcomes. Specifically, the pilot promotes academic outcomes by channeling student interest in the outdoors into a more formalized, credential-based ELA pathway in which students can gain high school or college credit. According to the pilot team, "[Before *Oxbow*], we were taking kids into the woods on weeklong canoe trips, hiking in the western Maine mountains, and we were meeting once a week and doing team-building activities. . . . Kids were planning these trips themselves and they weren't getting credit."

   Even as students earn academic credit for these activities, the pilot also seeks to improve students' social and emotional well-being following the impact of the COVID-19 pandemic. According to one pilot team member, "Within 50 yards across the street are fields and woods all around us. So even being able to utilize the things directly around us . . . the mindset that learning could happen outdoors." Being able to teach outside was perceived as a facilitator in improving students' social and emotional well-being and is seen as the primary factor in maintaining higher levels of student engagement in the course and continuing to build interest for future iterations.

INNOVATIONS

- Can be scaled up and across schools
- Links local outdoor opportunities with student wellbeing
- Expands popular club's features into a model for all students

The team reported that they have also been collaborating with Partnerships in Education and Resilience (PEAR), an organization that aims to integrate new models of education that incorporate health, public policy, and psychology perspectives.[1] By partnering with PEAR, the *Oxbow Outdoor Pilot* program will have access to PEAR's holistic student assessment tool that collects, analyzes, and tracks data to promote social emotional development among students. In the spring 2022 class, pilot staff implemented the PEAR assessment tool and saw positive impacts in student emotional well-being in preliminary results.

3. **It builds on a popular after-school club**. One of Mt. Blue's specific assets in implementing the *Oxbow Outdoor Pilot* program is the pilot team's previous experience facilitating outdoor club activities, particularly with the YETI club, and previous career experience. According to one team member, "When I started here 16 years ago, there was already an outdoor experiential group here called YETI. . . . It's the group that preceded *Oxbow*; I think of it as the inspiration for *Oxbow*." It was noted by the pilot team that YETI allowed students to have new opportunities and experiences in an outdoor setting while also learning new skills. While the YETI club is longstanding at Mt. Blue, the frequency of the activities offered have dwindled the past 2 years due to COVID-19.

Implementation of learning model

Infrastructure and materials

Construction activities of the yurt and purchase of transportation equipment did not begin during the first year. The pilot team explained that they decided to focus on other components of the pilot, especially developing the curriculum, before turning their attention to the physical infrastructure. Stuff turnover, including the loss of the district's facilities director, contributed to this decision. In the meantime, pilot staff have purchased various outdoor equipment with RREV funds, including life jackets and paddles for canoeing, outdoor chairs for activities in the field, and study materials to assist in elements of the course such as a wilderness first aid certification that were secured through a partnership with the University of Massachusetts.

Course scheduling and length

In the pilot plan, *Oxbow* was intended to be a full-year course where students would spend two semesters learning and applying the skills and knowledge that made up the *Oxbow* curriculum. However, during the first year it was offered as a one-semester course. According to the pilot team, this decision to condense the course into two semesters was "not ideal," but necessary because the pilot award was not announced until almost the beginning of the school year, and the school was not able to add a full-year course into the schedule with such short notice. Starting in 2022–2023, the course will be offered through F-CTC as a full-year course, which the instructor anticipated will offer students a deeper experience, especially because they will have opportunities for outdoor activities in all four seasons.

[1] Learn more about PEAR.

The future site of a yurt intended for outdoor instruction.

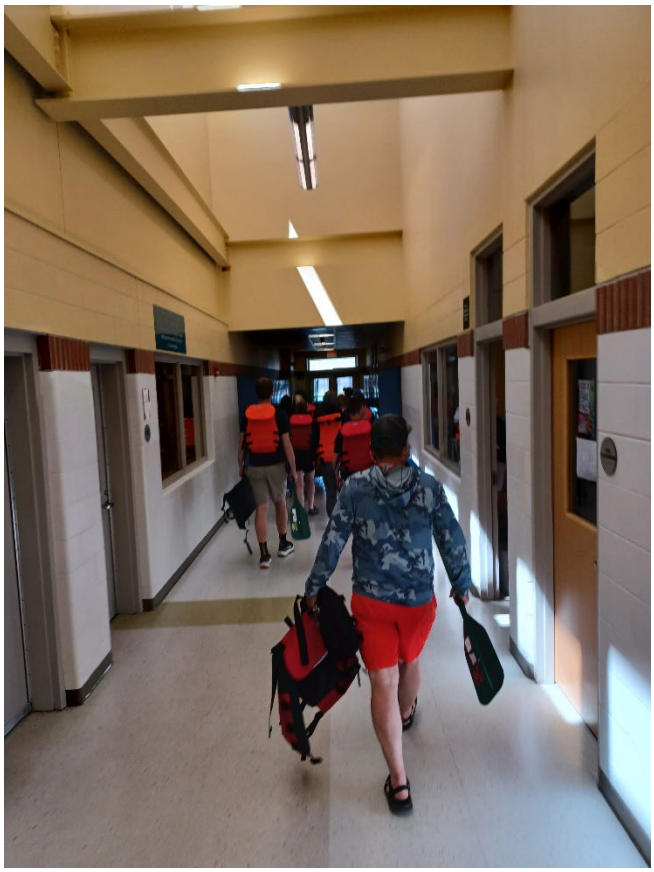
Staffing

Mt. Blue has experienced some staffing challenges in 2021–2022 that affected implementation. Before Mt. Blue applied for an RREV award, the principal had become the district interim superintendent and had very limited involvement in RREV planning with the pilot team. After serving as the interim superintendent, the administrator came back to the original role of principal only after the RREV application was submitted and approved by the Maine Department of Education. Ultimately, this led to a missing administrative perspective when planning for implementation, particularly in terms of the logistical challenges involved with establishing a new elective course that mixes core curriculum and elective standards.

Additionally, the school decided to engage one of their current ELA teachers for the class instead of hiring a new staff member. An administrator at Mt. Blue explained that hiring a new position that would be a "half-time English teacher and half-time outdoor coordinator" would be impossible to find because they "struggle to find English teachers, period," much less someone who could fill such a unique role.

Class activities

Outdoor activities have been offered to students participating in the pilot, including tying knots, building outdoor camps, and working with canoes. Members of the pilot team commented that their different backgrounds and skills have been complementary. For example, the team member affiliated with F-CTC has helped incorporate engineering concepts and activities in the Mt. Blue ELA class. Going forward, this team member intends to integrate aspects of the course in the pre-engineering class he teaches at F-CTC.



Students in the Oxbow course going outside with their instructor to practice paddling canoes in a nearby pond.

The *Oxbow* program has also helped Mt. Blue build a relationship with the University of Maine system. Participating students can earn college credit through dual-enrollment in courses such as Wilderness First Aid and Outdoor Leadership.

Oxbow did not carry out any field trips in the fall 2021 or spring 2022 semesters but has continued planning for future field trips, including some during the school week and some longer weekend trips. These trips will ideally include other teachers on the Mt. Blue campus who are licensed Maine Guides. One pilot team member said, “We have an incredible staff as far as licensed Maine Guides that work in the building; I think we have three or four. And we have some overlap with some science teachers, and so the hope is that there’s going to be a lot of ownership in the building from lots of different individuals.”

Outcomes

The Oxbow pilot was designed with a variety of impacts in mind, including student academic and emotional outcomes as well as impacts on teachers and the broader school and community. While some of these impacts are still in the process of being measured and examined, some of the intended metrics and measures are described below.

Student outcomes

Throughout the two semesters the course has been implemented, students have demonstrated mastery of core English Language Arts and Reading (ELAR) learning principles and have been able to perform to a standard that has helped them receive credit for graduation. Across the course, 78 percent of students received higher than a B in the course. According to the course instructor, students grew in many of their measurable hard skills related to the course material, but also developed significantly in soft skills, such as communication and leadership, through the course activities. Student feedback also indicates that the non-traditional nature of the

course has helped in their learning and retention of ELAR course content. Students described being able to identify better with course content because it was presented in a more applicable, real-world context than that of other more traditional courses they were taking. This led to higher engagement in the material, and connected knowledge and skills with memories of course activities leading to higher perceived retention of course content.

In addition to academic outcomes, student emotional well-being has also been an area of focus in measuring the impact of the *Oxbow* pilot. During the first year, the PEAR assessment was administered at the beginning and end of the semester for each cohort. Even though the PEAR assessment is intended to measure change across an entire school year instead of a single semester, the pilot team described positive findings, including improvements in all measured areas of emotional well-being, including Resiliencies, Learning and School Engagement, and Relationships.[2] However, the course instructor noted that students during the fall semester demonstrated greater growth in well-being, which he attributed to some seniors feeling "done" with school in the spring. Going forward, the pilot team anticipates greater improvements.

Student also indicated in focus groups as well as in survey results that having *Oxbow* built into their school day has helped them look forward to coming to school and helped improve their overall emotional state. Students noted that these improvements were due to being able to enjoy more time outside of the classroom, the relationships they developed throughout the class, and the feelings of self-efficacy that come from learning skills that could help them survive or help others in the wilderness. These skills, as well as tangible certifications, such as in CPR and wilderness first aid, are evidence of positive impacts on students that go beyond traditional academic metrics.

Student survey results were also very positive (Exhibit 3). All respondents (n=15) somewhat or strongly agreed that they had more opportunities to learn outside a traditional classroom this year than in the past, that going outside helped them learn this year, and that they liked their experience in the Oxbow program overall. All but one student also agreed that they are glad they went outside to learn this year.

EXHIBIT 3. SUMMARY OF STUDENT SURVEY RESULTS (n=15)

Survey Item	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I went outside to learn this year.	93%	7%	0%
Going outside helped me learn this year.	100%	0%	0%
Overall, I liked my experience going outside to learn this year.	100%	0%	0%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	100%	0%	0%

[2] It is outside the scope of ICF's evaluation to analyze each school's individual data beyond what they report for their performance objectives. This summary is therefore based on qualitative data collected from the pilot team and does not reflect ICF's own analysis of Mt. Blue's PEAR data.

Teacher outcomes

As mentioned previously, during the 2021–2022 school year there was one teacher for the *Oxbow* course. During an interview, this teacher described positive changes in his own outlook toward innovation in education, especially the possibilities for using outdoor education to achieve academic and mental and emotional outcomes for students. However, *Oxbow* has not so far achieved its goal of broader change in the ways other teachers integrate outdoor activities in their pedagogy. According to the *Oxbow* teacher, getting the program up and running during the pilot year demanded his full attention, but in the future he plans to share his experience and reflections about the program with his colleagues who teach other courses.

Family outcomes

The families of all enrolled students were asked to complete an anonymous survey that included open- and closed-ended questions about their satisfaction and perceptions of the Oxbow program. Although only three parents completed the survey, their feedback was uniformly positive. All respondents answered that their students had more opportunity to participate in responsive educational activities this year compared to the previous year, and all said they would recommend Oxbow to other parents. When offered the opportunity to provide open-ended feedback, one parent commented that the course helped their daughter "do outside things that were outside her comfort zone, and she enjoyed that." Another parent described the program as a "healthy outlet" for students, especially in light of the stress and disruption they experienced during the pandemic.

EXHIBIT 3. SUMMARY OF PARENT SURVEY RESULTS (N=3)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 100%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 67% Somewhat satisfied – 33%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 100%
Would you recommend this program to other parents?	Yes – 100%

School and district outcomes

As one of the innovative aspects of the *Oxbow* pilot involved cross-institution coordination, there has been some progress in developing the pilot with the input of staff from both the high school and technical school. These efforts at coordination—both in terms of logistics such as the sharing of facilities and storage of materials, as well as more academic aspects, such as designing a course that also grants ELAR credit—have allowed staff and administrators to seek out additional ways of communicating and aligning efforts across institutions. While there are some elements of this coordination that are still being refined, there is hope that as the pilot

becomes more established, the process of coordination will be more streamlined and that the benefits of the *Oxbow* pilot, such as the facilities and materials provided by the grant, could be used by students in the more general student body. One administrator said, "I do think there's a significant amount of resources that will be coming to our campus and how wonderful for other people to be able to access that equipment."

Community outcomes

In conversations with *Oxbow* staff, it is clear that the pilot was designed specifically with the needs and opportunities of the community in mind. Pilot staff described their hopes of expanding the *Oxbow* pilot into a stepping-off point for students interested in careers related to the outdoors, such as wilderness guiding, rafting and boating, or participating in the ski industry. As the program transitions to an option within the technical school, these aspects of the pilot will ideally start to impact the broader community. However, it is too early to assess these outcomes at the end of the pilot year.

Future plans

The largest shift in the coming years, particularly related to the ending of the grant funding provided by the RREV program, is the transitioning of the supervision of *Oxbow* from the high school to the technical school with which it shares a campus. This will provide a more consistent source of funding as CTE schools generally have more opportunities for program-specific funding from government sources. It will also allow for an additional degree of flexibility in designing the course where academic requirements are not as strict. In practice, this transition will allow more students to participate in the program from more schools across the district. Students will continue to earn credit within their CTE program but also for college credit, and the F-CTC administration will take on fiscal responsibility for hiring and paying instructors as well as the maintenance and upkeep of materials and facilities related to the program.

There are still questions about the eventual size of the course and number of courses taught concurrently each year as well as who will be teaching once the transition is made, but those details will be addressed in the coming months. Also in the coming year, pilot staff anticipate progress on securing and constructing the yurt that was a part of the initial grant proposal. As staff undertake a renewed effort in the coming months to purchase and build needed facilities, they hope to be able to secure the materials as well as the necessary infrastructure (including power and Wi-Fi connectivity) within the next year. Pilot staff are also looking to find ways to resolve challenges that have arisen in scheduling field trips and overnight events that have been difficult due to COVID-19 restrictions. As restrictions are lifted, pilot staff hope to be able to provide the field activities that were initially planned as a part of the grant design.

Lessons learned

A tight labor market for teachers, especially in rural areas, may limit the scale and reach of innovative programs. As noted, the *Oxbow* course instructor was already an ELA teacher at Mt. Blue, and school leadership did not think it would be feasible to find another person capable of filling this role given their general challenges with finding ELA teachers. Since innovative programs by nature require a unique skillset and attitude, they can be hindered in areas with staffing challenges.

Program models that draw connections between more than one subject can pose administrative challenges related to teacher credentials and course credits. A distinguishing feature of the *Oxbow Outdoor Pilot* program is the way it draws connections between ELA and other content areas, particularly outdoor skills. Even though this innovation promises to reinforce learning across diverse content areas, it poses administrative challenges. For example, students currently receive credit only for an ELA course, but there is no formal recognition of the other skills they learn during the course. The blend of content areas can also pose a challenge for teacher recruitment because schools would need to find either a teacher who can competently instruct across disciplines or recruit multiple teachers for a single course which, as noted above, is challenging in a tight labor market.

Outdoor activities can give students new perspectives on ELA concepts. While the *Oxbow* program is still in the early stages, the pilot team has already observed a positive student response. One teacher remarked that students have been "super engaged," and characterized the outdoor activities as a "hook" that helps him get students interested in ELA concepts. Additionally, the social emotional learning (SEL) component of the outdoor learning model is another outcome they anticipate tracking once they begin receiving data from PEAR.

A charismatic and popular teacher can be a vital asset, especially when a new program is beginning, but these attributes are not easily replicable or scalable. In speaking with student participants in *Oxbow,* it is also clear that a large number of student participants registered for the course initially because of the reputation of its lead teacher. Many of the students had participated in the instructors' previous courses, generally freshman English, and felt drawn to the course initially because they knew the instructor and enjoyed his courses. This presents both a strength of the program as well as a challenge because, on the one hand, students enjoy an additional course with a quality instructor with whom they already have a strong relationship. On the other hand, a program built on a single instructor poses challenges with long-term model scalability and replication.

The pilot year is an opportunity to establish systems and structures independent of physical infrastructure, which may take longer to build than expected. The delays in building the yurt meant that the full program envisioned in the pilot plan has not yet been implemented. *Oxbow* used this year to refine the classroom components of its program, such as the Wilderness First Aid course and certification test; strengthen coordination with other organizations, such as University of Maine and their Early College Program; and engage in outdoor activities such as canoeing, fire-starting, and tent-pitching that do not require physical facilities.

Individual Adopter School – HCA: Year 1 Case Study

Harpswell Coastal Academy, Region 7 – Cumberland

Background

Harpswell Coastal Academy ("HCA"), a public charter school about 30 miles north of Portland, is considered its own school administrative unit (SAU). Admission is available to any Maine student, but the charter provides for a "deliberately small" enrollment as part of its education model. During the 2021–2022 school year, HCA is serving 79 5th–8th grade students at their middle school campus in Harpswell and 102 9th–12th grade students at their high school campus in Brunswick.[3] According to school administrators, the students come from a wide range of areas (approximately 20 towns). More than half of students are considered economically disadvantaged and 33 percent are identified as students with disabilities (Table 1).[4]

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	181	178,860
Locale Classification	Town	N/A
Students Identified as White	94%	88%
Students Identified as Economically Disadvantaged	57%	41%
Students Eligible for Free/Reduced Price Lunch	59%	44%
Students Identified with Disabilities	33%	18%
Median Household Income	N/A	$57,918
Adults with a Bachelor's Degree or Higher	N/A	32%
Adults in Labor Force	N/A	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

Since its founding in 2013, HCA has followed a standards-based model in which students complete projects to demonstrate proficiency in individual academic standards. The school is a member of the Expeditionary Learning network, which means students play an active role in conceptualizing and implementing projects driven by their own individual interests.[5] According to

[3] In May 2022, the Maine Charter School Commission approved consolidation plans for HCA's two campuses, which will start in fall 2022.

[4] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018-2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019-2020 school year.

[5] See How We Learn at HCA.

HCA school leaders, in practice, students learn through four primary modes: workshops, investigations, electives, and community service opportunities.

During the COVID-19 pandemic, teacher turnover and changes in remote learning made participating in Expeditionary Learning challenging for teachers and students. In the winter of 2020, one HCA administrator and one teacher developed the Rethinking Responsive Education Ventures (RREV) proposal through the Innovative Mindset Pilot Development (IMPD) course to address these challenges. HCA leadership and educators credited the IMPD course with helping them use design thinking, especially by being more intentional in seeking to understand teachers' and students' perspectives and previous experiences. More specifically, as a part of the course, HCA leaders and teachers conducted "empathy interviews" with students, alumni, teachers, and community partners. Through these interviews, HCA administrators shared that they gained valuable insight into barriers and gaps within students' experiences. For instance, these interviews brought to light the need for a stronger connection between student internships and service-learning opportunities in the community and their classroom teaching and graduation requirements. Additionally, HCA identified the need to support teachers with incorporating fieldwork and service learning into their regular practices.

Program description

In August 2021, HCA received an RREV award ($210,660) to further develop and implement their community-based learning program, *Change Your World!*, beginning in the 2021–2022 school year. The model is focused on strengthening and expanding community-based learning (CBL) opportunities for all students, with an additional focus for students in 11th and 12th grade, which is rooted in a desire to help the students build connections in the community and prepare for life after graduation. The range of CBL opportunities available to HCA students are described below.

Opportunities for all students include:

- **Fieldwork**, which consists of course-based activities outside the classroom that are directly connected to specific core content areas. For example, fieldwork includes activities such as collecting specimens from tide pools in support of a biology course.
- **Service learning**, which includes stand-alone and ongoing support to community organizations. These events are related to students' coursework, but more indirectly than fieldwork. For example, students have supported a local land trust through invasive species removal.

Opportunities for 11th- and 12th-grade students include:

- **Internships**, which are unpaid positions with community partners where students obtain hands-on experience in a topic of their interest.
- **Seminar courses,** which are offered to 12th-grade students and students participating in internships. Each seminar is offered once per trimester. These courses allow students to engage in career exploration, as well as to share and reflect on their internship experiences and explore how these experiences connect to life after graduation.

- **Early college/vocational courses**, which allow students to earn credit through local institutes of higher education, such as Southern Maine Community College. Vocational courses are currently offered through Region 10.

Key uses of RREV funding to support the model include[6]:

- **Hiring a Community-Based Learning Coordinator (CBL Coordinator).** The CBL Coordinator is responsible for strengthening the overall community-based learning program at HCA, and is engaged in coordinating opportunities in the community for fieldwork, internships, and service projects. The CBL Coordinator actively engages teachers in identifying fieldwork experiences and service opportunities that connect to curriculum content and provides the necessary logistical support. The CBL Coordinator also designs curricula for and instructs two seminar courses, which are key components of the model. In addition to engaging with teachers and students in CBL activities, the coordinator also actively communicates with local organizations to not only strengthen existing relationships, but also develop new community partnerships and identify future CBL opportunities for students.
- **Purchasing two transportation vehicles, renting buses, and hiring drivers to transport students to community-based learning opportunities**. Prior to implementation, HCA identified transportation as an important component of their learning model in order to assure that students have access to a range of community-based learning activities. The expansion on transportation options is intended to provide HCA students more equitable access to off-campus experiences and internships.

Through RREV, HCA improved and expanded their current transportation systems by purchasing two vehicles and exploring additional midday bus routes.

[6] Details about the how the RREV funding supports these positions was obtained during phone interviews and during our site visit with the school administrator and the CBL coordinator.

EXHIBIT 2. PROJECT LOGIC MODEL[1]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ HCA staff Local partners Expeditionary Learning (EL)	Hire a CBL Coordinator Articulate how CBL fits into the HCA Strategic Plan Clarify fieldwork processes and expectations for teachers and students, grades 5–12 Develop processes, routines, and structures for the CBL program Design and schedule professional development on fieldwork and service-learning with EL education Identify community partners Identify transportation options (school, public, bikes, etc.) for students doing CBL Work with students to build CBL into their schedules and long-term academic plans Hold regular check-ins with students, teachers, and community partners Create and administer surveys for formative and summative feedback on the program by trimester Develop and revise school policies on passage, graduation, and fieldwork Conduct year-end review Establish alumni network	CBL Coordinator hired Revised Strategic Plan Revised fieldwork processes and expectations Processes, routines, and structures for the CBL program Professional development on fieldwork and service learning List of community partners Identified transportation options Survey data on the program Revised school policies Alumni network	**Students:** • Develop routines for journaling during and after fieldwork • Choose service opportunities • Articulate the purpose and expectations for service **Teachers:** • Use inquiry journals to make curricular connections from fieldwork **HCA:** • Policies, routines, transportation, and structures support CBL • Partners and alumni support CBL • Data inform CBL	**Students:** • Increased ability to develop meaning from fieldwork • Increased community engagement • Increased student voice and agency **Teachers:** • Incorporate fieldwork and service learning into their regular practice **HCA:** • CBL is infused across the curriculum	Academic engagement, growth, and achievement will remain stable or increase for students in grades 11 & 12 Students will have more meaningful experiences that help them choose postsecondary options that support their goals and interests

[1] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

HCA's program is innovative and responsive for three main reasons:

1. **The program seeks to build long-lasting connections between the school and the community.** HCA educators emphasize that their pilot is not a "one-off field trip model." Instead, the pilot aims to integrate learning in the community as a normal part of student education. One educator explained, "We're an Expeditionary Learning school so our pedagogical model is to have students learn though experiences and work with project- and problem-based learning. And I think working in the community is a good way to achieve those two things." Another HCA educator said, "One of the things that we really want to do with this [model] is build those connections between the community and classroom so that it's more of a regular practice, that we know how to learn in both places, and we see how they're connected."

INNOVATIONS

- Grows connections between the school and the community
- Encourages student reflection on program experiences
- Engages students in unique local community contexts

2. **It provides built-in opportunities for students to reflect on their program experiences and cultivate meaning.** HCA staff explained that even though community-based learning has been a component of their educational model from the time the school opened, a key point of the pilot program is to provide students with more structure and opportunities to reflect on these activities and draw explicit connections to what they learn in the classroom. For students participating in internships, HCA's pilot model requires students to engage in reflective journaling and complete a reflective project that examines their experiences more deeply throughout the course of their internship and seminar participation. One HCA staff member noted there has already been some "really meaningful reflection done by students" this fall, and that these projects act as a way for students to document the impact the community-based learning program has had on them. The CBL Coordinator also encourages all who engage in CBL or class-based fieldwork to incorporate reflective practices.

3. **Connections with community partners and curriculum content engages students in real, local community contexts.** The community-based learning model at HCA allows students to gain exposure to experiences, as well as real problems within their communities. For example, when introducing the subject of climate change in the Gulf of Maine, one middle school teacher noted that she was able to bring in three different community partners who work directly on the water (in industries such as an oyster farming, lobstering, and tuna fishing) to speak with her students about their experiences with the warming water temperatures. This teacher reported that these conversations with community partners "gives [students] that evidence . . . like, what does climate change mean for your industry, and giving those first-hand accounts . . . instead of doing solely research online."

Implementation of learning model[1]

Staffing

A key component of the program was hiring the CBL Coordinator at the beginning of the 2021–2022 school year. An HCA educator said the CBL Coordinator has been successful in "laying a foundation for a long-term relationship between HCA and the organizations in the community that we're working with." The CBL Coordinator also teaches and designs the curricula for the two seminar courses.

Internships and seminar coursework

HCA began their internships during trimester 2.. Through interviews with students who participated in internships this year, several noted that they would spend about 3 hours twice a week at their internship sites. Examples of internships include:

- A student who works with a luthier, a local artisan who designs, builds, and repairs guitars
- A student who works at a local Habitat for Humanity and assists with fundraising planning as well as designing and evaluating volunteer training
- A student who works for the Harpswell Heritage Land Trust and engages in local forestry and ecology work

Through interviews with HCA educators, teachers expressed excitement for more students to participate in these internships, especially those with transition goals in their individualized education programs relating to career readiness and exploration. One educator said, "I definitely want to see that end result of more students individually and independently going out into the community."

In addition to internship opportunities, 11th- and 12th-grade HCA students are also able to participate in two seminar courses: Community-Based Learning 1 and Community-Based Learning 2.

- Community-Based Learning 1: This seminar course is available for any 12th-grade students and focuses on values, personality, interests, skills assessments, and career exploration. Through this seminar, the CBL Coordinator gets to know the students, understand their interests and goals, and help find suitable community partners where students can learn and thrive.

- Community-Based Learning 2: This seminar is specifically designed for any 11th- or 12th-grade student enrolled in an internship. This course invites students to reflect on and share their experiences, and then consider how these experiences can help shape postsecondary goals. Students also described their experience engaging in reflective journaling while interning, reporting that it not only helped them remember the work they engaged in, but also how they felt while doing it. In addition to internship reflection during their CBL-2 seminar course, students also reported that their seminar coursework

[1] Updates about the implementation of the model were captured through interviews (phone and in-person) with the school administrator, CBL Coordinator, HCA educators and students, and community partners.

included the exploration of workplace issues (such as safety, leadership qualities, and management styles) and employee rights and violations.

Prior to starting their internship, one student noted that they participated in the CBL-1 seminar course, which helped them explore their personality and work/workplace values. HCA leadership noted that around 57 percent of their students have participated in one or more of the seminars during the 2021–2022 school year.

Other community-based learning experiences

As mentioned, class-based fieldwork is embedded in HCA's school model as an Expeditionary Learning school. As part of their RREV model, HCA has expanded their *Change Your World!* program among their 5th–12th grade students. For younger students, the pilot provides resources for continued class-based fieldwork, whole-class service projects, and reflective journaling, with the intent of building the capacity of students to engage in focused internships and work-study opportunities as juniors and seniors. Additionally, these experiences are designed to enable students to not only gain hands-on experience connected to their academic program, but also an understanding of their potential role and importance in the community at large. According to HCA school leadership, nine out of eleven 5th–8th grade teachers and nine out of ten high school teachers engaged in course-based fieldwork during the 2021–2022 school year. Additionally, over 100 course-based fieldwork experiences occurred during the school year.

One example of the fieldwork activities that HCA middle school students engaged in during the 2021–2022 school year was with Growing to Give, a local community partner and organic grow-for-donation farm that employs climate-friendly farming practices. In the fall, a group of HCA middle school students visited the farm weekly to learn about the farming process and engage in activities such as harvesting and mulching. During the spring, students returned to the farm to engage in plant propagation. During an interview, an organization staff member noted that a benefit of these weekly visits was that staff were able to build on students' knowledge each week, enabling students to gain an in-depth understanding of the work on the farm and its regenerative practices.

One teacher who regularly engages students in fieldwork shared excitement over these expansions of CBL activities for 5th-12th grade students, saying,

> *"These [community] partnerships that we're building and getting kids integrated with starting in Grade 5 all the way up through their [high school] classes . . . they have repeated exposure to the work that those groups are doing and what purpose they serve in the community and what it could look like for them to be a part of it."*

This teacher's experience aligns with the intention behind expanding CBL opportunities for all HCA students to build their capacity to contribute to these community organizations through focused internships as juniors and seniors.

Professional development

Another activity of the program is facilitating professional development for teachers. According to a school administrator, HCA will use assessments to examine the status of fieldwork, teacher competencies, and student competencies to determine what their "organizational entry point" is

for introducing and engaging teachers in professional development opportunities. Professional development for teachers will start in Year 2. A core focus of this professional development will be how to engage students in learning from experiences. This will focus on the use of field journals and HCA will train staff on how to use writing to help students document and process their experiences. HCA leadership noted that next year's professional development will focus on supporting teachers in the use of fieldwork to support instruction and make it an integral part of the learning that happens at the school.

Outcomes

Outcomes of the first year of the RREV implementation are based on survey results from 27 parents and 16 students, as well as interviews with students, teachers, and administration. The outcomes are described in the sections below.

Surveyed parents/caregivers in Harpswell and surrounding areas report having access to the responsive educational activities they want. In a parent/caregiver survey (Exhibit 3), 100 percent of those surveyed reported it was "very important" or "moderately important" that schools offer responsive education activities, and 89 percent reported they were "very satisfied" or "somewhat satisfied" with such activities offered by HCA.[2] Additionally, nearly three-quarters (74 percent) of parents agreed that HCA offered more responsive educational activities in 2021–2022 than in the past school year. All of those surveyed stated they would recommend the program to other parents. When asked to explain why they would recommend this program, one respondent reported that "there is so much learning to be done and it doesn't need to always happen in a classroom. CBL affords our students opportunities to learn outside the classroom and outside the traditional modalities of teaching."

EXHIBIT 3. SUMMARY OF PARENT/CAREGIVER STUDENT SURVEY RESULTS (N=27)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 96%
	Moderately important – 4%
How satisfied are you with the availability of responsive education activities offered through your child's school?	Very satisfied – 74%
	Somewhat satisfied – 15%
	Neither satisfied nor dissatisfied – 4%
	Somewhat dissatisfied – 4%
	Very dissatisfied – 4%
	A lot more opportunity – 54%

[2] A survey was sent to parents/caregivers of 181 HCA students. There were 27 parents/caregivers who responded to the survey. It is possible that multiple parents/caregivers from one household responded. Additionally some parents/caregivers may have more than one student enrolled at HCA. With this low response rate, interpret the findings with caution.

Question	Results
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	Slightly more opportunity – 19%
	About the same as last year – 23%
	Slightly less opportunity – 4%
Would you recommend this program to other parents?	Yes – 100%

Surveyed students report positive views about opportunities and experiences with the CBL program. In spring 2022, a survey was administered to high school students at HCA.[3] Of students who responded, most indicated that they were glad they participated in the opportunities this year, that the program helped them learn, and that they liked their overall experience with the CBL opportunities this year (Exhibit 4). When asked about their favorite part of the CBL experience through an open-ended question, one student said, "Being able to take a step out of the classroom and help the community whilst learning about real-world experiences." While most students responded that they would not change anything about the program, several students noted that they would enjoy more hands-on CBL opportunities.

Exhibit 4. Summary of Student Survey Results (n=16)

To what extent do you agree or disagree with the following statements	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I participated in the community-based learning opportunities this year.	79%	16%	5%
The community-based learning opportunities helped me learn this year.	63%	26%	11%
Overall, I liked my experience with the community-based learning opportunities this year.	68%	21%	11%
This year, I had more opportunities to learn outside a traditional classroom than in the past.	58%	21%	21%

Students who engaged in internships and participated in site-visit interviews shared that they were able to reflect on and refine their postsecondary goals. One of the goals of the CBL program at HCA is to increase their students' academic and community engagement and awareness and access to post-graduation work and study opportunities. Although only a few students (n=3) participated in interviews, all three of them reported that their internship and seminar experiences enabled them to think about their future career goals. For instance, one student who engaged in an internship with Harpswell Heritage Land Trust noted that his internship allowed him to gain experience in local forestry. Upon graduation, this student intends

[3] Interpret results with caution as only 16 of 102 high school students responded to the survey.

to take a gap year before exploring additional education in forestry or ecology. Another student who interned at an animal hospital also expressed interest in pursuing veterinarian work post-graduation. While these two students' internship experience confirmed their career interests, another students' internship experience helped him refine his career field. This student, who interned with a luthier, explained that his internship experience helped him realize that although he does not want to be a luthier himself, he would like to continue to pursue a career in the music industry. He said, **"**I think my career in music, which is want I want to do, would be more on the side of studio work. I met a lot of session players and studio people at that internship that would walk in. So it gave me a cool idea of all the different things you can do in music."

Future plans

Campus consolidation. In May 2022, HCA received approval to consolidate two campuses, with their 9th–12th grade students in Brunswick joining their 5th–8th grade middle school campus in Harpswell in fall 2022. HCA administration reported that this consolidation will positively impact their CBL program, as a central location will allow for easier communication and consistency of implementation for all 5th–12th grade community-based learning activities. Additionally, leadership noted that the consolidation will provide more access to coastal ecology and additional learning opportunities for all students.

Teachers interviewed plan to continue to engage students in community-based fieldwork and encourage internship experiences. During interviews, teachers reported their goals to continue engaging their students in CBL activities during the next school year. For instance, a teacher at the middle school reported that she plans to amplify a major theme within her curriculum for the year (e.g., sustainability) and then "find people in the community to support that [theme] as the winter and spring curriculum evolves." Additionally, a high school teacher noted that she is excited for the consolidation and believes it will allow the school to build on the successful connections established with their Harpswell partners this year, as well as share opportunities for CBL across grade levels. Teachers also noted that they will continue to encourage internship experiences with students next year, and explained that, although fewer students may have engaged in internships this year than originally hoped for, students had really successful experiences that will act as a model for other students interested in internships out in the community.

Lessons learned

Developing community partnerships and securing student internships demands substantial time and energy; having a staff position dedicated to this role can ease the burden on classroom teachers. A key component of this model has focused on internship opportunities with local organizations. Through interviews with HCA leadership, it was noted that the process of fully establishing these partnerships (or reconnecting with previous partners) takes time. One interviewee noted, "There can be a lot of excitement on both of our parts about it. But then actually making it materialize into something happening I think has proven more complicated than I initially expected." The CBL Coordinator supports teachers in developing fieldwork and service-learning opportunities. One educator explained the effect of the CBL Coordinator in supporting these experiences: "Before we hired the CBL Coordinator, it was teachers trying to do it on their own. It was difficult . . . It's a lot of phone calls and lot of getting

back to people. A lot of effort and energy and time that it takes to build those relationships. So, I've just been impressed with the CBL Coordinator's energy in implementing the program."

Providing sufficient transportation is essential for student participation in community-based internships and learning activities. In addition to using the vans purchased through RREV funding, the CBL Coordinator herself also provided transportation to students to ensure equitable access to internship opportunities during the 2021–2022 school year. HCA administration also anticipates the addition of a midday bus loop for the 2022–2023 school year.

COVID-19-related limitations could continue to pose a challenge to fieldwork and in-person CBL opportunities. Reflecting on the CBL activities that occurred during the 2021–2022 school year, HCA leadership noted that the pandemic was a significant obstacle to engaging students out in the community. For instance, certain places and organizations would only meet with students virtually. Although HCA incorporated virtual learning opportunities with community organizations and partners, school leadership explained that these experiences did not provide the same "richness" as other in-person CBL opportunities.

Individual Adopter School – Noble: Year 1 Case Study

Regional School Unit #60, Region 9 – York

Background

Regional school unit #60 (RSU #60) is a rural school administrative unit (SAU) that serves approximately 3,000 students across 8 schools in Berwick, North Berwick, and Lebanon. The median household income in the SAU ($71,327) is higher than the state's median, although district administrators noted there is wide income disparity in the area, and more than a quarter of students classify as economically disadvantaged (Exhibit 1).[4] Overall, the assistant superintendent described the SAU as a "working-class community . . . in the process of economic development," but noted it lags behind some nearby towns on the coast that draw from a larger tax base. In September 2021, RSU #60 opened Noble Virtual Middle School (NVMS) for students in grades 5–8. There were 29 NVMS students during its first year (2021–2022).

EXHIBIT 1. SOCIOECONOMIC AND DEMOGRAPHIC CONTEXT

	SAU	Maine
Number of Students	3,008	178,860
Locale Classification	Rural	N/A
Students Identified as White	93%	88%
Students Identified as Economically Disadvantaged	27%	41%
Students Eligible For Free/Reduced Price Lunch (Noble Virtual Middle School)	36%	44%
Students Identified with Disabilities	17%	18%
Median Household Income	$71,327	$57,918
Adults with a Bachelor's Degree or Higher	35%	32%
Adults in Labor Force	93%	63%

Sources: Maine Department of Education, National Center for Education Statistics, and U.S. Census Bureau

Development of pilot project

RSU #60 received a Rethinking Responsive Education Ventures (RREV) award ($250,000) to create a student wellness program at NVMS called *Be Well Connected*. District leadership explained that they had been planning NVMS even before the COVID-19 pandemic because they wanted to offer students more learning options, but were concerned about the mental and emotional well-being of students who learned primarily in an online environment. The widespread shift to online learning during the pandemic exacerbated these concerns, and

[4] School data was collected from the Every Student Succeeds Act (ESSA) Dashboard reported by the Maine Department of Education and the National Center for Education Statistics (NCES) Search For Schools database. SAU information was collected from the Maine ESSA Dashboard, the NCES Search For Schools database, and the NCES Education Demographic and Geographic Estimates (EDGE) database. Information about the State of Maine was collected from the ESSA Dashboard and the U.S. Census Bureau Maine Quick Facts report. Note, the Students Eligible For Free/Reduced Price Lunch on a state level contains data from the 2018–2019 school year (the most recent publicly available data for the state), while both school and SAU contain data from the 2019–2020 school year.

supporting student wellness was a major priority from the planning stages of NVMS. According to the superintendent, the Innovative Mindset Pilot Development (IMPD) course came at a "perfect time" because the district was grappling with ways to provide an alternative setting for some students without making them feel separated from the school community. A two-person pilot team consisting of the district school health coordinator and the Noble High School health teacher enrolled in the IMPD course. The team explained they were looking to incorporate wellness into virtual learning, but when they started the course they did not have a clear framework for translating this goal into a tangible program. They credited the IMPD course with giving them the tools to "create a structure for ideas" about how they can support wellness for students in a virtual learning program. In addition to helping translate their ideas into a workable structure, the team noted the IMPD course also motivated them to "dream big" about creative ways to support student wellbeing in a virtual setting, with the goal of helping students "find their spark and become emersed in their learning" through a project-based curriculum.

Students participate in a team-building activity.

Program description

The *Be Well Connected* program is an integral component to NVMS, which opened during the 2021–22 school year to serve students in grades 5–8. Any family residing in RSU #60 may apply to attend NVMS, and students are eligible to participate in all the activities or clubs available to their in-person peers.

Students at NVMS learn at their own pace through project-based learning. Each student works with a learning coach, who helps them set individual learning goals and establish a strategy for achieving them. The strategy is tailored to each student but generally involves project-based learning and one-on-one meetings with a learning coach, which may be in-person or remote. The learning coaches help students stay on track with their academic progress by developing a tailored plan for each student, which includes daily and weekly tasks, activities, and goals. Learning coaches use a "dinner party" metaphor to guide their planning work such that student tasks include "main dishes, sides, and desserts." In this analogy, a student's time is their plate, and their main dishes are the core coursework in areas such as math or reading, the sides are

Students visited School House Farm in Lebanon, ME.

activities that students can choose from to complement the main, and desserts are the fun events that students can have after finishing their main and side dishes. In addition to their one-on-one relationships with their learning coach, the NVMS model also promotes student-to-student relationships by bringing all the students together for in-person learning and activities every Wednesday. During their in-person day, students work together on group projects, listen to guest presenters, and participate in team-building activities.

RREV funding supports the *Be Well Connected* program, which the pilot team characterized as inextricable from the overall NVMS model (Exhibit 2) because its support for student wellness is what underlies the flexibility and independence of virtual learning. The team observed that some students who could benefit from the flexibility of remote learning may shy away from the opportunity out of concerns for their social and emotional health. Moreover, even students who feel like remote learning is better for them overall could still benefit from wellness programming.

Be Well Connected is a proactive approach for supporting the physical, mental, and emotional wellbeing of all NVMS students. The RREV award provides funding to construct an in-person learning space for NVMS students, which will be used for their weekly in-person day. RREV funding also supports a partial position for a program coordinator to manage the planning, budget, and evaluation of the *Be Well Connected* program. In the second year, RREV funds will support a Virtual Wellness Counselor, a full-time position responsible for working with students, families, and learning coaches to develop and implement tailored plans to support the wellness of each NVMS student. The program also provides professional development for learning coaches focused on social emotional learning (SEL) techniques to prepare students for the challenges they may face.

EXHIBIT 2: PROJECT LOGIC MODEL[1]

Resources	Strategies & Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
RREV $ NVMS curriculum NVMS staff, including Remote Learning Director and two learning coaches	Conduct outreach with students and families about their options for virtual learning, including wellness support Hire a Virtual Wellness Counselor to develop programs and activities to support student wellness, including individual wellness plans and in-person activities Provide training to NVMS staff about student wellness, including links between wellness and academic outcomes and strategies for supporting student socio-emotional learning (SEL) Develop individually-tailored student learning plans that incorporate wellness as integral to students' success Provide resources to parents about how to support student wellness Establish a physical space for in-person activities, including team projects Provide opportunities for student interaction and relationship building, including field trips and team projects	Number of students enrolled at NVMS Number and duration of staff training activities Number of staff who attend training Number and duration of parent training activities Number of parents who attend training activities Number of individual student learning plans developed Number of field trips Number of team projects completed	Improved staff knowledge of and attitudes toward student wellness and its connection to academic growth Improved parents' knowledge of and attitudes toward student wellness and its connection to academic growth Students demonstrate SEL Improved student academic growth Decreased incidence of chronic absenteeism among students	Student and families in RSU #60 have options for virtual and in-person schooling Learning coaches incorporate wellness in their teaching practices Increased graduation rate among NVMS students	Increased adoption of wellness activities across the district NVMS students and alumni live happy and healthy lives

[1] Logic model format adapted from Regional Educational Laboratory Northeast & Islands Logic Model Template from the *Logic Models for Program Design, Implementation, and Evaluation: Workshop Toolkit* referenced in RREV Module 4: https://ies.ed.gov/ncee/edlabs/regions/northeast/pdf/REL_2015057.pdf.

Innovativeness and responsiveness of learning model

Be Well Connected is innovative and responsive for three main reasons:

1. **It promotes a culture of inclusion through the use of shared space, experiences, and activities.** A key component of *Be Well Connected* is its intentional approach to building a culture in which students empathize and support each other academically and socially. The program builds this culture through educator training on student wellness and through activities, policies, and practices that reinforce solidarity, kindness, and empathy as core values. Schoolwide in-person activities play a key role in these efforts. During the 2021–2022 pilot year, all NVMS students met in person on Wednesdays for group activities in specially designated areas at Noble Middle School. Starting with the 2022–2023 school year, students will meet in a new space specifically devoted to NVMS students. One parent said their child loves the mix of in-person and remote days because it allows them to socialize with their peers and work on team projects, which she felt contributed to a "sense of community" among students. One learning coach noted that during this in-person time, she and her colleagues are "very intentional" about how to spend their time and focus to ensure students are socializing while learning. During focus groups, students emphasized how much they value their peer relationships, which they described as qualitatively different than what they experienced when they attended school in person. For example, one student commented that her peers at NVMS have gotten to know her as a full person, and therefore do not prejudge her for her fashion choices but instead see how they reflect her real personality and interests. Other students said the underlying strength of their peer-to-peer relationships allowed them to have political conversations where people listened to each other instead of rushing to judgement or relying on stereotypes. Students agreed that these dynamics helped them learn because they were less socially anxious with each other or distracted by tensions with their peers.
2. **It incorporates a wellness component into the student educational experience.** Many middle school students experience physical, mental, and emotional challenges that affect their learning. When in-person schooling was paused during the pandemic, the RSU #60 district school health coordinator noticed increasing signs of anxiety and depression, isolation, and academic struggle among many students in the district. At the same time, remote learning offered students more flexibility and independence, which was particularly beneficial to students who experienced social anxiety when attending school in person. *Be Well Connected* is innovative because it draws a direct connection between students' wellness and their overall educational experience through its emphasis on SEL, stress management, and physical and mental health resources. To achieve this, *Be Well Connected* encourages students to practice empathy toward themselves and others, develop a sense of personal responsibility, and become "advocates for positive change." By doing so, the program integrates wellness across students' entire educational experience.
3. **Students have more opportunities to exercise agency over their learning and pursue their interests through project-based learning.** The virtual aspect allows students to learn at their own pace and take classes that interest them. One parent described how NVMS gives their child the "broad space and ability" to learn and do what they want. Additionally, NVMS gives students a "sense of control" over their educational

experience while still ensuring they take required classes and reach educational milestones. During a focus group, learning coaches drew connections between student wellness and student independence and the leadership needed for project-based learning. For example, one learning coach emphasized "the research skills, leadership skills, and problem-solving skills" students develop through project-based learning, and observed that students' overall wellness helps them grow more confident as they try out those skills. Parents agreed that students' independence and their wellness are mutually reinforcing. For example, one parent commented that her child derives a "sense of accomplishment" when checking off daily tasks and working at their own pace. In addition to exercising greater control over their course content and pacing, students are also encouraged to discover their interests by working on a "passion project," which is a self-directed exploration of a topic of interest to each student, with support from their learning coach, culminating in a presentation to their peers. For example, one student described an interest in blacksmithing, which he practices with his parents at home; his passion project involves creating metal tools and learning about the science behind the process. Several students described their passion projects as their favorite part of school and demonstrated enthusiasm for applying academic principals to a topic of great personal interest. One parent relayed an anecdote about her daughter that she felt exemplified the confidence the program had instilled in her. This parent described how her daughter had previously been very shy and had trouble interacting with others, especially adults, but this year during a field trip she "walked right up to the commander of the shipyard and introduced herself." This parent credited her daughter's confidence to her experience at NVMS, especially her growing ownership of her learning and the wellness aspects infused throughout the program.

INNOVATIONS

- Promotes a culture of inclusion through shared space and activities
- Wellness component
- Students have agency in their learning experience
- In-person space for students to connect with their peers

Implementation of learning model

Student identification and recruitment

Students who were interested in this program were asked to submit an application with written and video components, and their parents also had to submit a written application. The leadership team then evaluated the student application alongside their work habits, grades, attendance, parent input, and teacher and counselor recommendations to determine if the student was a good fit for the virtual program. Although NVMS anticipated serving 60 students in grades 6–8 in the first year of implementation, only 29 students from grades 5–8 participated in the program during the pilot year. The leadership team received more applications but decided some were not a good fit while others were offered a position but chose not to participate. Although *Be Well Connected* has not reached the planned capacity of 60 students, the development team explained they are not actively trying to achieve that mark and are instead trying to "do a good job with what [they] have going."

When asked about student demographics, the leadership team noted approximately one-third are strong students who were looking for flexibility and exploration in their education. Another one-third of students came from a homeschool experience and enjoy learning with an online option. The other one-third of the program are students who struggle with mental health issues as a result of the pandemic and are searching for learning options that allow them to interact with their peers while learning from home. However, these subsets are not mutually exclusive, and many students fall into more than one of these categories. Overall, many students are using the NVMS model as a transition to full-time in-person learning next year.

NVMS students participate in service activities.

Staffing

When the development team drafted the pilot program, they anticipated hiring five staff members: three full-time learning coaches, a part-time special education teacher, and a Remote Learning Director. NVMS has hired two of these coaches; the Remote Learning Director also serves as the third learning coach. Additionally, the development team has not yet hired the special education teacher and is using in-house support. They hope to fill these positions as the program grows over the next year.

NVMS also intended to hire a full-time Virtual Wellness Counselor with a background in school counseling or social work to support the learning coaches and guidance counselors throughout implementation. However, at the beginning of the first year, the pilot team decided to focus on developing and implementing the program in-house before hiring an external counselor. During the 2021–2022 school year, the learning coaches and district heath coordinator shared the responsibilities of the Virtual Wellness Counselor. During a May 2022 focus group, the learning coaches agreed that sharing these responsibilities during the pilot year gave them a greater appreciation for the skills and experience necessary to succeed in this role, especially the importance of a social work background. Based on this experience, the team collaborated on a job description and candidate search and hired a licensed social worker who will begin in September 2022.

Community partnerships

The team plans to develop relationships with community organizations that will support implementation. The learning director explained they currently have community partners—including local historical societies and fitness organizations—to provide ad-hoc, project-specific expertise for some of their initiatives. The district school health coordinator also mentioned they have partnered with the Choose To Be Healthy Coalition[1] to provide resources for substance use prevention and health and wellness support.

Construction of physical learning space

Shared physical space plays a key role in the *Be Well Connected* model, especially its emphasis on building a common culture among NVMS students. Throughout the pilot year, students met in person at Noble Middle School, but starting in fall 2022 students will have a separate space for their program. In June 2022, the North Berwick town planning board approved NVMS' plan to purchase and install a modular 930-square-foot yurt-style building with a bathroom. NVMS staff explained that they chose the round shape of the yurt to "create a calming and community-centered environment." Pilot leadership originally envisioned this space on the site of Noble Middle School, but decided to move it near the Mary Hurd Academy, which is about 5 miles from Noble Middle School, for two reasons. First, they discovered that plumbing and electricity would be more challenging on the Noble Middle School property. Second, and more importantly, they realized that many NVMS students would feel anxious going to the same location as the traditional middle school, whereas putting the yurt in a separate location would ease those concerns. As of May 2022, a foundation had been laid for the new space, and the structure was scheduled to be delivered in time for the 2022–2023 school year.

Outcomes

NVMS educators have improved their understanding of connections between student wellness and academic outcomes. Educators at NVMS described growing confidence over the course of the pilot year in their role as learning coordinators, especially their dual responsibilities for student wellness and academic growth. Learning coaches said they appreciated how *Be Well Connected* centers student wellness and provides them "a structure" for integrating wellness in their overall approach. In particular, learning coaches described the Building Access Reducing Risks (BARR) model as a valuable tool for coordinating their support for students and drawing connections between their wellness and their academic performance. One parent commented that teachers at NVMS made "the impossible happen every day."

NVMS has developed a unique culture that centers student wellness and solidarity. As noted earlier, one of the innovations behind the *Be Well Connected* model is its culture of inclusion, which it develops through intentional teacher strategies and the use of shared space and experiences. On a student survey (Exhibit 3), 88 percent of students said they were glad they participated in the *Be Well Connected* program and 79 percent agreed that they liked their experience overall. When asked whether they thought participating in the program made them happier this year, 58 percent of students "agreed or strongly agreed" that it did, while 33 percent "neither agreed nor disagreed" (one student somewhat disagreed that the program made them happier). Almost three-quarters of students (74 percent) said they are "happy with their

[1] See Choose to Be Healthy.

friendships and social connections" and "feel good about relationships with students" at least most of the time. During focus groups, students were asked to compare their experience at NVMS with in-person schooling, and several students emphasized their deeper and more supportive relationships with *all* their peers at NVMS. For example, one student commented that "the whole class is supportive, even if you mess up," which he said helped him stay motivated even when he struggles with the content. Several students said that they felt more comfortable expressing themselves authentically with their fellow NVMS students because of shared mores around kindness and understanding, and drew connections between this culture and their confidence and enthusiasm for academic aspects of school. Several parents described how their children exhibited several behavioral and social-emotional challenges before coming to NVMS, but "blossomed" since participating in the program, which they attributed to the school culture at NVMS. For example, one parent described how their child experienced major behavioral and social-emotional challenges while learning in person, but has become much happier and well-adjusted this year, which they characterized as "lifechanging for our whole family."

EXHIBIT 3. SUMMARY OF STUDENT SURVEY RESULTS (N=24)

To what extent do you agree or disagree with the following statements	Strongly or somewhat agree	Neither agree nor disagree	Somewhat or strongly disagree
I am glad I participated in the *Be Well Connected* program this year.	88%	13%	0%
The *Be Well Connected* program helped me learn this year.	71%	25%	4%
Overall, I liked my experience with the *Be Well Connected* program this year.	79%	17%	4%
This year, I had more opportunities to learn outside a traditional classroom than in.	100%	0%	0%
Be Well Connected has helped me be a happier person this year.	58%	38%	4%

Students have demonstrated academic growth. On the student survey, 71 percent of students agreed that *Be Well Connected* helped them learn this year, and only one student disagreed with that statement. All students who were enrolled for the entire school year passed all of their classes, and chronic absenteeism (defined as nine or more absences) decreased from 35 percent to 15 percent among students with baseline data. During a student focus group, students drew connections between their overall wellness and their academic performance. For example, one student credited her experience with project-based learning with teaching her not to "be afraid to try things," which she has applied to her schoolwork overall.

Parents were not familiar with *Be Well Connected* as a specific program, but were satisfied with their children's options for responsive education and their experience NVMS. When asked about their children's experience in the *Be Well Connected* program, most parents were not familiar with this term, but instead referred to their child's overall experience at NVMS. All seven parents who completed the survey stated that they were satisfied with their

experience and would recommend the program to other families. One parent said, “The program has helped my daughter more than any typical school has,” which they attributed to “one-on-one” support they received at NVMS. A different parent stated that the program “really eased (my child’s) anxiety levels” and reported that “being able to watch your child grow in confidence is by far the best thing.”

EXHIBIT 4. SUMMARY OF PARENT SURVEY RESULTS (N=7)

Question	Results
How important is it to you that schools offer responsive educational activities?	Very important – 86%
	Somewhat important – 14%
How satisfied are you with the availability of responsive education activities offered through your child’s school?	Very satisfied – 86%
	Somewhat satisfied – 14%
Compared with last school year (2020–2021), how much opportunity has your child had to participate in responsive educational activities this year?	A lot more opportunity – 86%
	Slightly more opportunity – 14%
Would you recommend this program to other parents?	Yes – 100%

Future plans

Move into the dedicated space. Noble will move into the new physical space at the start of the 2022–2023 school year.

Hire a Virtual Wellness Counselor with a background in social work. During the pilot year, NVMS chose not to hire a full-time Virtual Wellness Counselor because district leadership felt they would better understand the needs and role of this position after the first year, especially as they got to know the students and their needs. According to one member of the pilot team, when they initially conceptualized the role, “We were looking at someone more with a physical fitness or health and wellness background [but] as we met with students it became obvious . . . it would be helpful to have someone on our staff who was a mental health professional and could help us better meet those needs and provide services.” In light of this experience, the district hired a Licensed Clinical Social Worker to start in the 2022–2023 school year. In the meantime, the existing staff have attended training on physical wellness, including sleep habits, healthy eating, and exercise. One teacher commented that she incorporates “stretching, dance, or a workout for 10 minutes a couple days per week” to ensure that physical wellness is part of students’ experience.

Conduct more field trips. NVMS leaders described plans to conduct more field trips in the future. One educator explained that they wished to have more field trips during the pilot year, but pandemic-related closures and a bus driver shortage disrupted those plans. A few parents also expressed interest in more field trips, especially those that involve the local community. Going forward, program leaders said they intend to commit more time for advanced planning of field trips, especially arranging transportation several months before scheduled trips.

Develop programming for 9th-grade students who wish to stay primarily virtual learners. NVMS intends to expand to 9th grade in the 2022–2023 school year so that current students have an option to continue with virtual schooling. Program leaders reported that many of the current 8th-grade students "don't want to miss out on a traditional high school experience" and so plan to return to in-person schooling. However, other students have indicated a preference to continue learning online. Expanding NVMS to 9th grade will allow these students to maintain an approach that is working for them and avoid a return to a traditional school model after an extended period at NVMS. However, the district health coordinator cautioned that "there are developmental differences between a 5th-grader and a 9th-grader" that could pose a challenge to the inclusive, whole-group aspects of the program model. To address this challenge, NVMS is exploring ways to include 9th-graders in the program while providing more individualized support. There are no plans to expand NVMS to 10th grade or beyond, but the health coordinator observed that students in these grades have more options for online classes or dual enrollment at community colleges in Maine.

Lessons learned

Allowing students opportunities for self-expression and reinforcing positive peer relationships are key building blocks for a culture of inclusion. During focus groups, students consistently emphasized how much they valued being seen as unique individuals. Several students described negative past experiences when they felt judged by stereotypes, which in turn caused them to resent their peers and school environment, and ultimately disengage academically and socially. By contrast, at NVMS they felt like their peers and teachers appreciated them for their true selves, which they found motivating. In particular, students felt that their passion projects and the supportive relationships with their peers and teachers helped them build their confidence and be more engaged learners. Moving forward, a challenge will be maintaining this culture as the program grows and more students are integrated into the environment.

Students' wellness and self-confidence are vital to achieving their academic potential. The pilot team recognized that student wellness and mental health play a critical role in students' motivation and academic performance. Emphasizing the importance of socio-emotional learning in *Be Well Connected* has provided students with the support and services to overcome the challenges brought forth by the pandemic while growing into independent and motivated learners. In interviews with parents of students in the program, there was a common theme: This program is really meeting the needs of its students and allowing them to feel more confident, independent, and in charge of their educational goals. As one parent put it, the program has "cracked the code" of how to keep their child engaged in school and excited about learning. Another parent said he was "shocked" at the change in his child's attitude toward school since starting at NVMS, which he described as "a total 180" in terms of her academic engagement and mood after school.

Offering students greater flexibility and empowerment also requires sustained focus on accountability and structure. Several learning coaches observed that there is a risk to giving students too much flexibility and empowerment over their learning, which is a lack of accountability and ultimately slower academic progress. One learning coach stated that over the course of the year, she adjusted her practice to be firmer with deadlines for assignments. "We were being super-flexible with students and what we found was students are actually motivated

by due dates and so we started clamping down on those [because] the students are still middle schoolers" who need accountability. Another learning coach said she learned that "our students need structure. When I gave them too much freedom, it was hard" because students were not always sure about expectations. In response, learning coaches emphasized due dates, and the reasons for them, more consistently and firmly with students.

Strong communication between teachers, students, and parents can identify early warning signs that a student is struggling. The district school health coordinator observed that NVMS' model, especially its focus on student flexibility and independence, elevates the need for regular and multidirectional comprehensive communication across all stakeholders, especially teachers and parents. A centerpiece of this communication is the weekly student goal sheet. Program leaders described this document as a place for students to reflect on their progress, including their strengths and areas to work on. Students and teachers meet each week to review and update the sheet, and parents receive a copy and encouragement to reflect with their students on their goals, strengths, and priorities. In addition to this structure, parents also described ad-hoc check-ins with teachers, and stated that teachers have been terrific at responding to emails promptly and go "above and beyond" to get parents involved in their student's learning experience. This includes holding monthly "coffee chats" to update parents on the progress of the program and get feedback from parents on how to improve the program going forward. The teachers have also noted that parents are doing an excellent job of communicating with teachers, supporting their children, and adapting as the program evolves. Although parents were very positive about substantive communication about their children's' learning and wellness, a few parents suggested improvements to communications about logistics, especially advance planning of in-person activities and field trips.

A virtual program for middle school students should have a plan for transitioning students to high school. One of the reasons Noble targeted students in grades 5–8 is that students in these grades are often especially vulnerable to social anxiety or other emotional challenges, and therefore benefit more from additional wellness support. However, creating a program for students in these grades demands planning for their transition out of middle school. Many students may decide to return to traditional high school programming, but for some students, a return to traditional, or even alternative but in-person programming, could pose an acute challenge after multiple years in a virtual environment. Programs seeking to replicate the NVMS model should develop plans for supporting students when they transition out of the program.

Students, parents, and teachers are motivated by the opportunity to pioneer new approaches to virtual education, but sustaining and scaling the program will require deliberate effort to keep stakeholders engaged beyond the "honeymoon period." Program stakeholders consistently adopted a self-conception as innovators seeking to develop new and better educational models for current and future students. Multiple parents used the term "pioneers" to describe their children and teachers and NVMS, including one parent who commented that *Be Well Connected* and NVMS can be a "good model for future education" since it offers a good balance of independent work and socialization. The teachers said the program has "exceed[ed] what they thought they could accomplish," and they hope the program can continue to expand in the future. Stakeholders expressed optimism about the model moving forward, even as program leaders cautioned that the "honeymoon period" could wane as the program becomes more established. Some educators also observed that sustaining the unique

culture of NVMS could become more challenging as it expands with more students and grade levels, including teachers and students who were not present as the culture was built during the first year. To address these concerns, program leaders plan to celebrate the reasons NVMS is unique, be deliberate in hiring new staff who buy in to the model, and to continue to keep student wellness at the center of the NVMS model.