

RREV's Innovative Pilot Template - Katahdin Schools

As part of the **Innovative Mindset and Pilot Development** courses being offered through several of Maine's institutions of higher education, the RREV project uses a consistent template for the creation of all future pilots. Because every pilot created and tested with RREV funds WILL BE published in EnGiNE, we want all of Maine's educators to have the assurance of consistency.

This template provides an outline of the components required of an Innovative Pilot. The information in this template will serve as the basis for requests for school/district level project funding.

Section 1: Define the Need

A. Describe the need for your innovation.

Consider what evidence supports the need for an innovation, and the evidence that suggests your innovation will improve the current situation. at least 200 word count.

Education is at a critical moment in the US and around the world. The changes in our world and our schools brought about by COVID-19, highlighted and exacerbated the already serious gaps in social-emotional development in children. Now is the moment to transform our schools into places where the full scope of children's development is prioritized. Numerous studies have shown that an integrated curricular approach that includes place-based strategies and outdoor learning, lead to academic success and positive social-emotional outcomes. A whole child approach to education encompasses cognitive development, social-emotional development, and physical development. A whole-child approach to education with outdoor learning as the central focus is a way to strengthen educational equity and ensure every child reaches their full potential. Pivoting toward a whole-child approach includes designing learning environments to support the whole child; developing curriculum, instruction, and assessments for deeper, meaningful, authentic learning.

The average time children spend at recess is 25 minutes in the U.S. according to a survey conducted by Voices of Play an organization dedicated to sharing the benefits of recess. For middle and high school students, they may not be outside at all while enduring a seven-hour school day. Some classrooms at the middle and high school do not even have windows. Prisoners have more time outside in a day than some of the children in a typical public school setting. This sedentary lifestyle at school has resulted in an increase in childhood obesity, increased diagnosis of attention deficit disorder, decreased physical abilities, decreased mental health, lack of coping skills, and the inability for self-regulation. The changes in childhood are leading to challenges that are impacting children's overall wellbeing leading to numerous challenges for children from physical frailty and obesity to more frequent illness to anxiety and lack of emotional control (Becker et al., 2017; Hanscom, 2016; Hauck & Felzer-Kim, 2019; James et al., 2017). Leonard Sax, MD, Ph. D. shares in

his book, *The Collapse of Parenting* (2016) that American kids are much less active than children were three or four decades ago. Studies have shown that children are not meeting the recommended amount of time engaged in physical activity or time outdoors, particularly at the early childhood level (Byrd-Williams et al., 2019).

The increased time indoors is leading to physical, cognitive, and social-emotional challenges for children (Bento and Dias, 2017; Gray & Birrell, 2015; Hanscom, 2016; Kroll, 2017). Research has shown that there are physical, cognitive, and social-emotional benefits of spending time outdoors in nature (Bento & Dias, 2017; Hanscom, 2016; Warber, DeHudy, Bialk, Marselle & Irvine, 2015). Young children are spending the majority of their waking hours in a physical school setting so it is critical to include teachers in the process of incorporating more time outdoors in nature (MacQuarrie, Nugent & Warden, 2013).

Schools have become very focused on standardized testing leading to a decreasing amount of time spent outdoors during the school day (Repko-Erwin, 2017). The laser focus on math and reading achievement for the past 15-18 years has not allowed for adequate time nor opportunity to support students' whole child development. Instead, students have received an increased amount of direct instruction in these two subjects. Content areas such as social studies and science and how children experience them through their senses in the natural, outside world has been neglected.

Teachers have complied with what has been asked of them, even though they know it is not what is best for children. Educators know children are meant to move and that children's social-emotional wellbeing and physical health are not as prioritized as reading and math in the public school system. More and more students are exhibiting behaviors that are sometimes perceived as ADHD, but in actuality may be the result of not having enough opportunity to move throughout the day.

Society has changed over the past 30 years with an increase in single-family homes, an increase in the number of mothers of young children in the workforce, increased use of technology and increased safety concerns all of which have led to children spending less time outdoors in nature (Sax, 2016).

School boards, school administrators, and school staff must recognize the need to support the overall wellbeing of children. Spending time outdoors learning in an integrated manner supports this need. Now is the moment to transform our schools into places where the full scope of children's development is prioritized.

- B. Identify which students would be impacted, targeted, or supported by the innovation.

Review the evidence – quantitative and qualitative data and research – that indicates this group of students is considered the most vulnerable and would benefit from the described innovation.

Data you can use to inform your innovation, rationale, and targeted student population include the performance of various groups of students (e.g., students in rural locales, students from low socio-economic conditions, students with disabilities, students who are EIs, students at risk for dropping out, student who are homeless) with regard to academic achievement, graduation rates, social emotional and mental wellness, economic data, and/or workforce participation.

250 word count.

This innovation benefits all students at Katahdin Schools; students in grades PreK-5 and students who desire an outdoor learning pathway in grades 6-12. Sixty-six percent of students at Katahdin Schools (RSU 89) are identified as low socio-economic status (SES). This group of students is considered the most vulnerable and would benefit from our innovation. Research continues to link lower SES to lower academic achievement and slower rates of academic progress as compared with higher SES communities. For instance, children from low-SES families enter high school with average literacy skills 5 years behind those of high income students (Reardon, Valentino, Kalogrides, Shores, & Greenberg, 2013). Low SES in childhood is related to poor cognitive development, language, memory, socioemotional processing, and consequently poor income and health in adulthood. The school systems in low-SES communities are often under-resourced, negatively affecting students' academic progress and outcomes (Aikens & Barbarin, 2008). In 2014, the high school dropout rate among persons 16–24 years old was highest in low-income families (11.6%) as compared to high-income families (2.8%; National Center for Education Statistics, 2014).

Additionally, eighteen percent of our student population receive special education services. With an integrated curriculum and focus on the whole child this population of students will benefit as well.

Section 2: Describe the Innovation

A. Describe the goals of your innovation.

Consider how your innovation will meet the needs of the identified target student population(s) and how you plan to achieve your goals. Additionally, consider any changes in policy, practice or structures you expect as a result of the innovation.

250 word count.

This innovation will meet the needs of all PreK-5, middle school students, and high school students through a comprehensive whole-child approach that focuses on cognitive, social-emotional, and physical development that uses outdoor education as its central feature. This innovation will also meet the professional learning needs of teachers providing instruction to these learners.

In approximately one hour per week and 20 sessions with a curriculum expert, our aim is that children will be happier and more successful at school potentially decreasing the instance of childhood obesity, diagnosis of attention deficit disorder, increasing the physical stamina, coping skills, self-regulation and overall wellbeing of children. The creativity and novelty of incorporating the outdoors into everyday teaching will lead to teachers having greater job satisfaction and less burnout. Teachers being happier and experiencing less stress will lead to an increase in teacher retention.

Our project accomplishes this through a three-pronged approach including the following:

- 1.) Integrated curriculum innovation and development using outdoor learning as the central focus
- 2.) Teacher professional learning and support
- 3.) The development of creative and engaging outdoor learning spaces

First, our school will partner with the Rural Aspirations Project and Anita Stewart McCafferty, The Assistant Professor of Educational Leadership at the University of Southern Maine. These curriculum experts will support teachers with how to develop content-rich curricular units of study. Teachers will learn how to plan units that incorporate social-emotional learning, physical movement, and how to utilize innovative outdoor learning pedagogy to increase positive outcomes for students. We will continue our partnership with community organizations such as the Katahdin Learning Project to support integrated units in life science.

Second, the units will be developed. We will provide ongoing, embedded professional learning opportunities for teachers. This includes support from in-house and contracted instructional coaches, a school guidance counselor as well as continued support from outside contracted experts from Rural Aspirations and Anita Stewart McCafferty. Experts will continue to support teachers to refine and implement the units. The training will occur over multiple days. Two days of professional development and then monthly meetings throughout the school year. This will occur with approximately 11 teachers, an instructional coach and interventionist.

The opportunities for unit development will be a continuous process throughout the school year with weekly and monthly meetings from our outside experts and full day training during workshop days.

Next, we will work collaboratively to design and build open-air outdoor learning spaces that can be used throughout all seasons of the year and will be conducive to whole-child learning. These spaces, nestled in the woods around the school may look like a chalkboard between two trees with stumps as seats or wooden benches. These spaces will support the integrated curriculum and also the connection to nature that research has shown, which is so vital to building resilience and healing from trauma. Physical benefits will also result from outdoor learning spaces. Recent research highlights the increase of occupational therapy in schools and an overall decrease in endurance and strength of young children (Hanscom, 2016). Having frequent opportunities to walk and run on uneven ground, balance on logs and climb natural structures all support gross motor skills and core strength. Giving children the opportunity to move will allow for more focused individuals. Pathways that lead to a school garden and shared outdoor classroom space will be constructed to address students of all mobility (ADA Compliant).

Finally, we will evaluate the process using pre and post-climate surveys conducted bi-annually in the elementary school. At the middle and high school level we will evaluate the success of the program using the Holistic Student Assessment tool (www.pearinc.org). "The Holistic Student Assessment is a data-driven tool to promote social-emotional development in young people in school and afterschool settings. The self-report tool provides teachers, program staff and administrators with a social-emotional "portrait" of the

unique strengths and challenges of each young person. Data can be reported at individual, classroom, school and district levels. The HSA can be administered to students at different times in the year” (www.pearinc.org).

B. Describe activities included in your plan for each stage – preparation (P) or implementation (I) – of your innovation.

- **Preparation** includes building stakeholder awareness, establishing routines and processes, and coordination of logistics.
- **Implementation** includes planned implementation activities, as well as professional development for the educators participating in the innovation.

Activity	Purpose	Stage (P or I)	Date of Completion	Person Responsible
1. Build stakeholder awareness -Teachers -School Board -Parents -Community Members	Building stakeholder knowledge of the research supporting outdoor learning and the benefits of developing children’s social-emotional, physical, and cognitive growth (whole-child approach)	Preparation	Ongoing	Leadership Team
2. Establishing routines and processes	Building stakeholder knowledge of best practices for outdoor learning, including teaching in winter, how to transition lessons outside	Preparation	Ongoing	Outdoor Learning Consultant Grade-level team meetings
3. Site development	Survey school grounds for best possible areas for outdoor classrooms Mark any areas that are unsuited for classrooms Assess and address any hazards and risks in the areas we plan to use Teachers explore school grounds and choose areas that are suited for outdoor classrooms Teachers survey areas for potential risks and hazards Teachers identify where potential whole group, small group, and exploration areas can be	Preparation	Ongoing beginning in Fall 2020	Classroom Teachers Special Teachers (Music & Guidance) School instructional coaches and Interventionists Parent Volunteers

	<p>within the area of the outdoor classroom</p> <p>Begin to map out a trail to connect all classrooms</p> <p>Create a map of trail and classrooms</p> <p>Provide seating options for students, such as stumps, wooden benches, etc.</p> <p>Enlist the help of volunteers to help with clearing outdoor classroom space</p> <p>Enlist the help of volunteers to help clear the trail</p> <p>Create an outdoor learning team/trail team to support teachers in setting up their spaces and to map/oversee the trail creation/maintenance</p>			
4. Curriculum Development	<p>Teachers work together and with a consultant to identify what they currently teach and how they can shift this learning outside.</p> <p>With consultant support, teachers will begin to develop integrated, content-rich units that can be taught outside</p> <p>With consultant support, teachers will plan lessons and authentic learning experiences for students to engage with outdoors</p>	Preparation	Ongoing-Beginning Fall 2020	Rural Aspirations Project- Korah Soll Classroom teachers Instructional coaches
5. Professional Development	<p>Teachers begin shifting from teaching inside to teaching outside</p> <p>Teachers begin teaching intentionally planned content-rich lessons outside</p> <p>Teachers conduct pre-assessments, ongoing formative assessments, and post-assessments after each</p>	Preparation	Ongoing-Beginning Fall 2020	Instructional Coaches

	<p>unit to measure student learning</p> <p>Teachers and students participate in surveys about their experience with outdoor learning</p> <p>Over the course of the pilot, teachers engage in professional book studies that enhance their knowledge of authentic curriculum, outdoor learning, and an approach to teaching the whole child. Books may include but not be limited to:</p> <ul style="list-style-type: none"> -Childhood and Nature: Design Principles for Educators, David Sobel -Teaching Strategies that Create Assessment Literate Learners by Anita Steward Mcafferty & Jeffrey S Beaudry -Messy Maths by Juliet Robertson -Dirty Teaching by Juliet Robertson -Perfect Pairs Using Fiction & Nonfiction Picture Books to Teach Life Science Grades K-2 and Grades 3-5 -Ongoing Professional Development with Foss Science Units of Study through the University of Maine RiSE Center 			
6. Planned implementation	<p>Teachers have established units of study focused on outdoor learning and implement lessons.</p> <p>Teachers will reflect in grade level teams and and grade span groups on their practice and continue to refine their practice</p>	Implementation	On-Going	Classroom Teachers
7. Data Collection and Analysis	<p>Teachers will use ongoing assessment data to reflect on teaching and learning. Teachers will adjust teaching focus and teaching</p>	Implementation		Classroom teachers Leadership Team

	strategies based upon student data.			
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Section 3: Define Innovation Outcomes & Measure to Assess Outcomes

- A. Identify the outcomes (*i.e., student outcomes, changes in instructional practices, changes in student practice*) that you expect to see as a result of your innovation. *350 word count.*

Consider both short-term and long-term outcomes, at different points in the time (e.g., at 6 months, 12 months, 2 years and 3+ years).

This sedentary lifestyle at school has resulted in an increase in childhood obesity, increased diagnosis of attention deficit disorder, decreased physical abilities, decreased mental health, lack of coping skills, and the inability for self-regulation.

As a result of our innovation, we expect to see many positive changes for children within our organization. We will see an increase in the ability to cope with small problems and self-regulate at a higher level.

In the first six months of our innovation, we expect to see changes in instructional practices. Teachers will be working with curriculum experts to plan units that incorporate social-emotional learning, physical movement, and how to utilize innovative outdoor learning pedagogy to increase positive outcomes for students. Teachers will be facilitating learning outdoors. In the first six months, children will have more opportunities to be engaged in authentic learning experiences.

The development of creative and engaging outdoor learning spaces will be happening in the first six months of our project. Working collaboratively with outdoor learning experts, we will design and build outdoor learning spaces that are conducive to whole-child learning. These spaces, nestled in the woods around the school will support the integrated curriculum and also the connection to nature that research has shown, which is so vital to building resilience and healing from trauma.

After twelve months of our innovation, teachers will have had more than ten sessions with curriculum experts. The teachers have created curricular maps at their grade level. Their instructional practices now include integrated units that span from September to June. They have had a chance to teach units throughout the year and can reflect on what went well and what needs to shift. Teachers are happy and will report that students are happier with the increased time outdoors and with the authentic learning opportunities. Teachers are working closely with instructional coaches to refine and enhance their teaching practices.

After twelve months of the innovation, according to climate surveys, children and teachers are reporting they are happy at school. Children report that they enjoy learning outdoors. Teachers report greater job satisfaction.

After twelve months of our innovation, creative and engaging outdoor learning spaces have been created in the woods around the school. These spaces support the integrated curriculum and support children in building resilience and provide the natural space to help children heal from trauma.

After two years of our innovation, 80% of our teachers will be more confident with planning and teaching integrated units of study which incorporate the outdoors. Teachers understand

the connections between children's physical, social-emotional, cognitive, and academic development, as well as their physical and mental health. The goals of this program include 80% of teachers reporting job satisfaction and 80% of students reporting that they are benefiting from this innovation physically, cognitively and/or social-emotionally. This may include a decrease in childhood obesity in our school, a decrease in behavioral interventions, increased mental health and wellbeing and an increase in the ability of our students to self-regulate. Teachers' greater job satisfaction will be measured in a bi-annual climate survey. Childrens' wellbeing and impact of this initiative will be measured with a bi-annual student survey. Outdoor classrooms will be maintained by teachers, students, and an active group of parent and community volunteers.

B. Describe your plan for collecting and reviewing data to assess your innovation outcomes. [Fermi estimating impact game plan.](#)

Potential data to collect includes qualitative and quantitative data (e.g., surveys, interviews, focus groups, observations, exit tickets, and on-demand assessment(s) that can be considered.

Data Type	Baseline (B)- System map Interim (I) Summative (S)	Frequency of Data Collection	Person(s) Responsible for Collection and Data Quality
1. The Holistic Student Assessment (HSA) (Middle School and High School Outdoor Education Students)	Baseline- Fall Interim- Winter Summative- Spring	Twice a Year	Classroom Teachers or Guidance Counselors
2. DIBELS Reading Assessments (Grades K-5)	Baseline- Fall Summative- Spring	Two times a year	Katahdin Schools Assessment Team Members, classroom teachers and content specialists
3. DIBELS Math Assessments (Grades K-1)	Baseline- Fall Summative- Spring	Two times a year	Katahdin Schools Assessment Team Members, classroom teachers and content specialists
4. NWEA Reading, Language, and Math Assessments (Grades 2-5 and Middle School and High School Outdoor Education Students)	Baseline- Fall Summative- Spring	Two times a year	Classroom Teachers

<p>5. Pre-Post Unit Assessments (Grades K-5 and Middle School and High School Outdoor Education Students)</p>		<p>Before and After Integrated Units</p>	<p>Classroom Teachers</p>
<p>6. Early Mathematics Diagnostic Interview (Grades K-2)</p>	<p>Baseline- Fall Summative- Spring</p>	<p>Two times a year</p>	<p>Katahdin Schools Assessment Team Members, classroom teachers and content specialists</p>
<p>7. Surveys (Grades K-5 and Middle School and High School Outdoor Education Students)</p>		<p>Ongoing</p>	<p>Katahdin Schools Principals, Guidance Counselors and Superintendent</p>
<p>8. Observations (Grades K-5 and Middle School and High School Outdoor Education Students)</p>		<p>Ongoing</p>	<p>Superintendent, Principals, Guidance Counselors, Content Specialists, Classroom Teachers, Support Staff, Parents, School Board Members</p>

- C. Describe how you will **scale and sustain** your innovation, including necessary policy changes, changes in mindsets, capacity-building activities, and **long-term financial sustainability**. *250 word count.*

Consider the systems changes that this innovation will require and promote.

According to our long-term estimates, it will cost approximately \$12,000.00 a year to maintain our innovation after the pilot implementation.

Consultant Fees Total: \$3,000 per year for KES & \$3,000 per year for KMHS

Grades PreK-5 20 teachers/staff will participate in ongoing curriculum development and implementation coaching provided by experts to support this innovation which will impact 140 students

Middle School and High School Outdoor Education 1-2 teachers/staff will participate in ongoing curriculum development and implementation coaching provided by experts to support this innovation which will impact approximately 45 students per year

The goal of the consulting fees is to build the capacity of teachers so that this pilot project can sustain beyond the initial 2 years.

Outdoor Gear: \$2500.00

This total would replace any outdoor gear for students in grades PreK-5 and middle school/high school outdoor education students. Outdoor gear is gear that supports the comfort level while participating in outdoor learning. Examples of gear for students: rain pants, rain/winter boots, warm mittens, winter coats/pants, and bug nets for head

Site Development and Maintenance: \$4,000.00

This would include any extra hours included beyond the school day for facilities and maintenance personnel to maintain the outdoor classrooms, walking trails, etc.

In addition to financial sustainability, we will build capacity in our stakeholders. Partnering with experts the capacity of teachers will be built to sustain the integration of the outdoors in learning. A minimum of 3 parent education sessions will be held to deepen the understanding of this innovation. A school board presentation will also take place to ensure transparency and support for this innovation. When thinking about stakeholders joining the organization, such as educators it will be essential to hire those that share the same passion and vision for educating children.

It will be essential to highlight and showcase the impact on children and staff with other invested stakeholders such as school board members, community members, and parents. Our innovation will be an essential part of recruiting and retaining quality personnel as well as the way to strengthen curriculum and instruction.

- D. Describe the feasibility study you engaged in during the development of your innovative pilot plan, including which aspects of the plan for the pilot were reviewed, which stakeholders were engaged, feedback received and revisions made to the plan as a result of the feedback. *150 word count.*

We interviewed stakeholders during the development of our innovative pilot plan. These stakeholders shared concerns around students social-emotional, physical and cognitive development, expressing the need to support students in all of those areas. Particularly with the disruption that COVID has presented to the school system causing disjointed learning with periods of remote instruction and in-person learning, the need for a whole child and

integrated approach to support student learning is desired by those stakeholders involved in the feasibility study. Additional challenges that were shared included access to quality outdoor gear for students, physical challenges of teachers, and teachers not having the materials they need to engage in outdoor learning. The stakeholders were classroom teachers, ed technicians, parents and community members.

After the interviews, we created a problem survey. The problem survey revealed that our biggest challenge was the need to address students whole child development. Other challenges that were revealed was students not having the proper gear to be engaged in outdoor learning for longer periods of time. Not having enough materials and teachers' physical challenges were not identified as major challenges. It was revealed that these problems occurred regularly enough to warrant a change.

We shared the concept prototype flyer which described our pilot plan to more than 10 stakeholders. 100% of the stakeholders shared that they would be interested in engaging in the project. They wanted more details about how teachers would be supported in creating integrated units of study. Teachers and the school counselor were the stakeholders.

The feedback we received from the interviews, problem surveys, and prototype revealed that many stakeholders are on board with this innovation. They are interested in more details about how they will be supported.

Section 4: Identify Key Expenses

- A. Identify the key expenses associated with the preparation, implementation, and ongoing refinement of your pilot. 150 word count.

Expenses could include staff time, materials, professional development activities, facilities, and other related expenses. This section does not need to include specific costs, but rather list out the different costs that should be considered to implement the innovation.

The key expenses associated with our pilot include, consultant fees, professional learning materials, cost of staff time, outdoor gear, and site development.

Consultant Fees (Integrated curriculum units for outdoor learning, Ongoing support with integration implementation. Build strong literacy practices that support student growth. They will provide ongoing coaching and feedback)

Preparation: \$6000.00 a year

Implementation: \$80,000 a year

Ongoing Refinement: \$6000.00 a year

Professional Learning Materials: Books (Messy Math by Juliet Robertson; Dirty Teaching by Juliet Robertson, etc)

Preparation: \$1000.00

Implementation: \$3000.00

Ongoing Refinement: \$1000.00

Purchased Professional Services for curriculum development, curriculum implementation and ongoing teacher support with implementation during the school year and a total of 6 days outside of the school calendar (3 per year)

Preparation: \$17,500

Implementation: \$49,800

Ongoing Refinement: \$12,000

Outdoor Gear (student rain gear, winter gear for students, tents for middle and high school outdoor ed, storage units for materials, wagons/sleds for transporting teaching materials to outdoor spaces, etc.)

Preparation: \$1500.00 a year

Implementation: \$25,000 a year

Ongoing Refinement: \$2500.00 a year

Site Development and Maintenance: Further developing our outdoor trail ensuring it is ADA compliant, incorporating students in the ongoing maintenance of trails and outdoor spaces, etc.

Preparation: \$1500.00

Implementation: \$80,000 a year - building an ADA trail around the perimeter of our outdoor spaces that will be maintained by students in the middle and high school outdoor ed programs.

Ongoing Refinement: \$4000.00 a year

Holistic Student Assessment Tool from Partnerships in Education and Resilience
(www.pearinc.org)
\$3,000 per year