

Oyster River School District

Title IID mini-grant proposal

February 27, 2011

A1:

Everyday students observe, explore, and experiment with the world around them, and they must make sense of that world by inventing their own explanations. How can students deepen their ideas and understandings of content knowledge through the use of stop-motion animation? Working in collaboration with Tufts University's iCreate to Educate, we have designed lessons to bridge and facilitate the process of students representing their ideas.

Our eighth grade team will use the Sam animation program to develop animations in multiple disciplines throughout the year. While using this technology, both the teachers and the students will evaluate the depth and clarity of understanding of content learning as specifically related to reading comprehension and demonstrated through the animations. Students will reflect on how using stop-motion animation has affected their learning in the content areas?

A2: essential questions:

How can students make sense of their world by inventing their own explanations?

D1: impact of need:

One of the greatest challenges has been in teaching students how to use software applications. Another great challenge is working with 13 and 14 year old students as they move through the cognitive-developmental process. In short, many of them are only beginning to enter the abstract thinking phase of their development in September, but by mid-year, the majority are able to do so and by the end of the year, virtually all are thinking at higher levels. The challenge is to promote that growth through a combination of good teaching practices and useful technologies. By using SAM Animation this year, we have finally begun to bridge the gap, from knowing the basics of how to use a program to being able to use an application to boost student learning.

The founders of iCreate to Educate have spent two full days introducing our students to Sam Animation. In our limited exposure to this software we have seen how easy it is to manipulate and how engaging it is to the learning of our students. Given the choice of a number of poems, our 8th grade students worked in pairs to capture the essence of each poem in animation. Converting one genre to another is an analytical and evaluative process that requires a deeper understanding of a piece of writing. Within 45 minutes, and with only the briefest of explanations about the software, each pair created an animation that represented an analytical and critical reading through images, three-dimensional figures, movement and sound.

NECAP data collected from 2007 to the present indicate that on average, 82% of our cohort have scored at Proficient or higher in reading over 4 years, while 13% have scored at Partially Proficient or lower over the same span. We believe technologies applied to reading comprehension have been less efficient than possible due to the nature of their utilization. Our classes are heterogeneously grouped. Even those students who are often disabled by the limited ways in which we ask them to show us what they know and can do, were able to fully engage in analyzing and representing their thinking as they created their animations. Students took great pride in their problem-solving through the process and the quality of their finished product.

D2: Content/IT

We wish to continue to extend this learning through a number of hands-on project-based learning experiences using SAM animation in all of the disciplines on team. Our main goal is to provide opportunities that aid students in deepening their reading comprehension. Our additional goals are:

- To see how the application of this technology enables our students to develop, represent, deepen, clarify, analyze, evaluate, and reflect on their ideas and their understandings of content in a variety of disciplines.(ICT:Creativity and Innovation)
- To engage all learners in opportunities with tools of technology that are visual and kinesthetic(ICT:Use technology effectively and productively)
- To explore alternative ways that allow our students to develop and represent their ideas and understandings (ICT: Communicate and collaborate)
- To help our students understand that all learning is a recursive process of shuttling back and forth in the midst of problem-solving (ICT:Think critically, solve problems, and make decisions)
- To guide students through the analysis and reflection of their learning as they create animations in the various disciplines

D3: Pedagogy:

In Social Studies at Oyster River Middle School, there has been an evolutionary progression of technology implementation over the past 15 years, ranging from the very basic (word processing) to the complex (the application of various software to foster growth in higher level thinking skills). Sam Animation easily allows me to work with students as they negotiate the mental challenges of understanding higher level reading (for example, primary source documents) while at the same time requiring them to synthesize a great deal of complex information into logical, sound causal relationships. By being able to break events down into component parts, they can visualize the events, thus gaining

greater understanding of their reading, and finally understand the connections in the events that become the causal relationships.

Classroom example: An annual challenge in my classroom has been in studying the Boston Massacre of 1770 in order to determine not only the sequence of events, but also to judge who bore ultimate responsibility and to connect the event to other significant aspects of the American Revolution. The unit includes extensive primary source document reading, including witness depositions given in the trial of Captain Thomas Preston, as well as a reenactment of the event put on by the students after weeks of reading, study and rehearsals. A portion of the challenge is the fact that so many people provided testimony, from different points of view about their government and from different vantage points on the fateful evening of March 5, 1770. There are so many variables it is often mind boggling to the students. My plan is to use SAM Animation to have the students break down the event by witness, time, point of view and vantage point, create the animated short films, then use those films to promote understanding, debate and the final ability to provide logical finality to the above stated challenges. (ICT:•Conduct research and use information)

Language Arts:

The dilemma in the Language Arts classroom today is engaging students as readers and writers with the tools at which they are most adept—the tools of technology. We want our students to become literate, articulate citizens of the world, who are able to communicate their ideas and beliefs clearly, succinctly, and creatively. The ability to draw understanding from sophisticated and complex genres of reading, and the ability to communicate one's own ideas and beliefs through writing, are enhanced with the use of visual tools—storyboards, tellingboards, movie and book trailers, photographs and artwork. Animation allows students a simple-to-use, yet sophisticated visual medium, for complex thinking: interpreting, analyzing, synthesizing, organizing, and evaluating their understandings and ideas.

Eighth grade students will collect poetry from a number of classic and contemporary poets throughout the year. They will have a collection of approximately 12 poems. By the end of the year each student will have the opportunity to turn one of these pieces of poetry into an animation.

Eighth grade students will work across the grade levels when they listen to the personal narratives of 5th grade students in Chris Hall's class on Voicethread. In pairs they will choose one of these narratives to animate, after listening to the 5th grade writers read their stories.

With several computers dedicated to animation and set up with webcams, students will be encouraged and invited throughout the year to create any animations of their own choosing from any reading or

their own writing. In all reading and writing projects (author/genre studies, social justice/human rights studies, free choice reading and writing) students will be given the opportunity to represent their thinking and understanding through animations.

Science:

Students will be required to use animation to demonstrate their understanding of science concepts.

Students will animate explanations of:

1. Heat transfer by conduction, convection and radiation
2. Changes in States of Matter (solid, liquid, gas, and plasma)
3. Unique science demonstrations like the crushing of a soda can due to the force of atmospheric pressure after the rapid condensation of steam inside the can.

Students will also use animation in formal experiment reports to demonstrate procedure and suggest possible reasons for results.

Math

The challenge with math at the middle school level is the progression from concrete to more abstract. At the 8th grade level, it can be especially challenging since students are learning Pre-Algebra and Algebra concepts. Many of the students can get the answer, but they cannot explain why it turns out the way it does. Students often want to just be “given a formula” or have someone “tell me the steps”, but struggle to get the concept at a deeper level. Some of the areas students struggle with comprehension is:

Pre-Algebra:

- Fraction operations
- Integer operations
- Solving Multi-Step Equations

- Coordinate Geometry

Algebra:

- The different forms of Linear Equations
- Quadratic Equations
- Factoring /Foiling Equations

In the past students have been asked to explain how and why a process or property works, but pencil and paper have been very limiting. A good way to check comprehension is to see if students can teach the concept they have learned. Students will be asked to make an animation for next year's students about one of the concepts they have learned during the year. This would provide an opportunity for Algebra students as a review right before the Midterm Exam, and then again before the Final Exam.

We believe that the use of Sam Animation software will enable us to significantly boost student achievement in reading, while concurrently supplementing student ability to draw high-level conclusions in all of the disciplines. Margaret Geller, an astrophysicist at Harvard, once said universities are looking for students who have high test scores in science and math, but they also want students with strong imaginations and the ability to communicate their ideas and thinking. These projects immerse our students in high levels of abstract thinking and creative ways of best communicating those ideas, while working in a number of collaborations with other students.

D4: PD goals

Three professional development goals for our team include:

1. Develop ideas for collaboration across the disciplines.
2. Discover the creative ways teachers in NH have integrated SAM Animation into their classrooms
3. To develop curricular activities to meet our existing learning goals, integrate innovative and creative technologies into these activities, and develop formative and alternative assessments

1. Our team will work directly with iCreate to Educate consultants to make adjustments in our existing curricula to integrate hands-on technologies and engaging teaching methods -- enhancing STEM content areas as well as other subjects

2. Our team of teachers would take a professional day to observe the work done by iCreatetoEducate in other school districts in New Hampshire. This work has been focused on science and math. Seeing what other districts have done would nurture and extend our thinking as we develop ideas for collaboration across the disciplines through technology.

3. Our team would meet regularly to continue to develop strong formative and alternative assessments. We would work with our Director of Instruction to create portfolio views in Mahara to showcase student growth during this year long project. We would develop reflective questions and authentic assessments through our digital portfolio system, Mahara.

The 8th grade Odyssey team will work collaboratively for a year on ideas and designs for these projects. We will meet on a daily basis for team meetings and will use this time to coordinate, research, and develop our ideas and findings in discussions with each other. These team meetings include the Special Education teacher and aides, who help the team create and implement curricula ideas.

D: Admin Support

We have the support of our principal, Jay Richard, our superintendent, Howard Colter, and our two Directors of Instruction, Danielle Bolduc and Meredith Nadeau. In addition we have the Director of IT, Sonja Gonzalez, available to help with the projects. Along with the support of Melissa Pickering

CEO / Co-Founder of iCreate to Educate in partnership with Tufts University.

D6: new teams

Our team has not participated in a mini-grant previously. However, our district has participated in the past and we have seen the direct impact this grant has made for our students.

D7:

We are a school district that accepts several interns from University of New Hampshire each year. Our interns will be involved in every aspect of this project.

D8:

Our classes are heterogeneously grouped. Even those students who are often disabled by the limited ways in which we ask them to show us what they know and can do, were able to fully engage in analyzing and representing their thinking as they created their animations. Students took great pride in their problem-solving through the process and the quality of their finished product. Putting the power of making ideas come alive in the hands of students gives them new tools and perspectives for seeing the science, as well as giving them ownership over the movies they make. The 8th grade Odyssey team will work collaboratively for a year on ideas and designs for these projects. We will meet on a daily basis for team meetings and will use this time to coordinate, research, and develop our ideas and findings in discussions with each other. These team meetings include the Special Education teacher and aides, who help the team create and implement curricula ideas.

D9: Presentation

Our team is not only excited about the projects described here, but also excited to be able to work with iCreatetoEducate and Tufts University as a research site to further develop Samanimation as a software application that truly engages our students as learners and enhances their understandings in the various disciplines. We have documented student learning through pictures, videos, anecdotal records, and student portfolios continuously through our years of teaching. We will continue to do this as we document what the students are doing, how they are doing it, and how successful they are in reaching the goal of deepening their understandings. With daily team meetings and early release days built into our schedules, we also have the ability and support to share these ideas with other faculty members.

The number of staff directly impacted by this project is 10 on the Odyssey team, including all content teachers and specials. The number of students directly impacted is 85. Many other students and teachers throughout the district would be impacted, however, as we (students and staff) share our learning in other classrooms, staff meetings, and workshops at the district and state level. We are excited about presenting at NHSTE Annual Technology Conference and also presenting at the TT SIG workshops for next year.

However, in collaboration with iCreatetoEducate, the number of teachers and students affected rises into the hundreds, as they also document the learning, video the students and teachers as they work with these applications, and put postings on their sites that describe the developments and findings that are both successes and challenges.

D10-video

Our team is exciting about documenting the process of this proposal and will attend all trainings on video production training as required in the RFP.

C1:scope

The 8th grade Odyssey team has been working collaboratively for a year on ideas and designs for these projects. We meet on a daily basis for team meetings and will use this time to coordinate, research, and develop our ideas and findings in discussions with each other. These team meetings include the Special Education teacher and aides, who help the team create and implement curricula ideas. In addition we have the Director of IT, Sonja Gonzalez, available to help with the projects. We have the support of our principal, Jay Richard, our superintendent, Howard Colter, and our two Directors of Instruction, Danielle Bolduc and Meredith Nadeau. Their support and expertise will continue to guide us through the implementation of these projects.

C2: appropriate for district:

According to NETS Essential Conditions for effectively leveraging technology for learning, there must be: Shared vision for technology constructed by all the stakeholders.

Our district's shared vision is: "It is the school district's responsibility to provide access to technology, training, and technical assistance support for systems operations and curriculum integration. We are committed to participation in the creation of educational technology through collaboration with communities throughout the world." This project is a reflection of our district's vision. Our district is committed to engaging all learners in challenging hands-on projects. It supports teachers that take risks to provide students with diverse and exciting learning opportunities.

C3-structures

Oyster River School District has always promoted technology integration and project based, differentiated learning. ORCSD has been awarded mini grants in the past. The Administration and School Board have supported teachers to take part in these projects. We have a solid infrastructure and a good student to computer ratio. In addition, we have five exceptional IT staff members that work hard every day to support the educational technology in our district. We have an up-to-date District Technology Plan with policies outlined for acceptable use of technology. We have a 10 MB fiber connection to the Internet. All computers in our school have connectivity to the internet. We have consistent and adequate Funding. We have a \$12,000 remaining in building funds to help support this project and have budgeted another \$30,000 in next year's technology budget.

C4:Team expertise

The 8th grade Odyssey team has been working collaboratively for a year on ideas and designs for these projects. We meet on a daily basis for team meetings and will use this time to coordinate, research, and develop our ideas and findings in discussions with each other. These team meetings include the Special Education teacher and aides, who help the team create and implement curricula ideas. We have two media specialists which will help collaborate with teachers and students on this project. We also have an assistant principal and principal that fully support the integration of technology in every aspect of the curriculum. They are working hard to support a one to one computer to student ratio and be the first school in the district that is "paperless". Our Director of IT and Director of Instruction will continue to support the teachers throughout this project. They can help co-teach the lessons and provide on-going, sustained, high-quality support for teachers in the use of ICT appropriate skills.

Our team has documented student learning through pictures, videos, anecdotal records, and student portfolios continuously through our years of teaching. We will continue to do this as we document what the students are doing, how they are doing it, and how successful they are in reaching the goal of deepening their understandings. We will have continuous assessment, both of learning and for learning, and evaluation of the use of ICT and digital resources.

C5-

Our team is fully supportive of implementing the project in classrooms, excited about participating in the professional development opportunities outlined in this proposal and required by the RFP. We will participate in the required mini-grant meetings and produce the three minute video on the process of this grant. We look forward to attending the Mini-grant celebration day and presenting at state and

local professional development days. We are fully aware of the evaluation requirements for this grant and will comply with all grant requirements.

C6 extent of impact:

This project will involve the work of all 8th grade teachers. The number of staff directly impacted by this project is 10 on the Odyssey team, including all content teachers and specials. The number of students directly impacted is 85. Many other students and teachers throughout the district would be impacted, however, as we (students and staff) share our learning in other classrooms, staff meetings, and workshops at the district and state level.

C7- extend to other schools

Our team is not only excited about the projects described here, but also excited to be able to work with iCreatetoEducate and Tufts University as a research site to further develop Samanimation as a software application that truly engages our students as learners and enhances their understandings in the various disciplines. In collaboration with iCreatetoEducate, the number of teachers and students affected rises into the hundreds, as they also document the learning, video the students and teachers as they work with these applications, and put postings on their sites that describe the developments and findings that are both successes and challenges.

Budget:

10 14" laptops (fitted with external microphones and headsets) @ \$675 = \$6750

4 webcams with articulating arms @ \$75 = 300

The school has already purchased 6 webcams, therefore, only 4 more are needed.

These computers and webcams would be set up either 2-3 to a room or as a bank of computers in one location as needed per project.

Software

The Oyster River School District has already purchased and been granted a license for the Samanimation software. Because their research has focused on science and math to date, our projects, especially those in language arts and social studies, will provide research information and data as iCreatetoEducate further develops their software for ease of application.

Additional Resources

5 Klutz Animation Books @ \$25 (including S & H)	@ \$25 =	125
Materials for creating artifacts to use in animation (clay, felt, white boards, markers, etc)		225
Professional Development Activities		
professional development provided by iCreatetoEducate (including work with the staff and the students)		
Substitute teachers for professional staff to visit other NH sites using Samanimation in a variety of disciplines and across grade levels		
4 substitute teachers @ \$75/day		300
Subtotal PD – 2,200		
	Total	\$10,000

OYSTER RIVER COOPERATIVE SCHOOL DISTRICT

Howard Colter ♦ Superintendent

Danielle Bolduc

Director of Instruction

Meredith Nadeau

Director of Instruction

To Cathy Higgins:

I am writing you in response to a formal proposal being submitted by the Odyssey Team at Oyster River Middle School. I have read their proposal with great interest. I am in full support of this proposal, and would allow teachers and support staff the time and resources necessary to fully implement all requirements, as outlined. We will keep our fingers crossed!

Best wishes,

Howard Colter

OYSTER RIVER MIDDLE SCHOOL

Jay Richard ♦ Principal

Todd Allen
Assistant Principal

Ray Celentano
Special Education Coordinator

March 7, 2011

To Whom It May Concern,

I am enthused to write in support of the Title IID technology grant application submitted by the 8th grade odyssey team at ORMS. As a school leader that is passionate about using technology in the classroom, I appreciate the teams' willingness to use new technologies as a means to increase student achievement and engagement in all curriculum areas. As their proposal states, all content areas will use the Sam Animation software to engage all students. Having witnessed a small trial with the software at ORMS, I am confident this proposal has potential to be an exceptional and unique learning experience for staff and students. If the team does receive the grant, I assure you I will support their efforts with my time, professional development opportunities, and any available resources. Please do not hesitate to contact me if I can be of any assistance.

Sincerely,

Jay Richard
Principal
ORMS