

Reading and Math Explorers™:

Professional Development



Sponsored by:
STEM Education Center

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Professional Development

An Interactive Qualifying Project Report

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Abstract

The goal of this Interactive Qualifying Project (IQP) was to design a professional development (PD) providing K-4 teachers with the expertise to navigate the Reading and Math Explorers™ (RME) website. The team researched learning, interactive technology, and successful professional development execution; this helped them create a PD. Participants provided feedback stating the PD was effective. Teachers gained skills to utilize RME, which they plan to implement in their classrooms. Results of this IQP are beneficial to interactive PD facilitators.

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Executive Summary

The Reading and Math Explorers™ (RME) was created as an eight volume supplementary curriculum for kindergarten through fourth grade teachers to use. This interactive site includes reading and math activities which engage students through the use of computer-based technology. The RME curriculum is made up of eight characters that are easy to relate to, along with content that connects reading and math to the historical background of the characters. Within the last few years this program has been turned into an interactive website so that it could become more accessible. The RME website is one way teachers integrate the growing computer-based technology in their classrooms. The goal of this project was to design a professional development (PD) aimed to provide elementary school teachers with the expertise to implement the RME website in their classrooms.

In order to successfully complete our Interactive Qualifying Project (IQP), we needed to complete the following goals:

- Learn the Reading and Math Explorers™ site workings
- Create questionnaires, interview teachers, and review data collected
- Design professional development
- Pilot of Reading and Math Explorers™ professional development with peers
- Develop focus group and post professional development survey questions
- Conduct Reading and Math Explorers™ professional development
- Interpret feedback and design of final professional development
- Documentation

The team performed background research to become educated for executing the IQP. During the initial teacher interviews the team discovered necessary information in order to create the most effective PD. Through the execution of this plan, the participants gained the knowledge and skills to successfully utilize the RME website as an alternate resource in their curriculum. Through a post PD survey and short focus group, the teachers expressed positive feedback about the project.

To be fully prepared for creating and conducting a PD, background research was done in the following fields: learning theories, learning styles, the RME website, interactive learning, and PD. These topics were chosen to research due to their relevancy to the project. For example, learning theories and styles are topics that are useful when deciding what to include in a PD and how to present it. The project team learned that everyone learns differently and that there are four categories of learning styles.

In order to be successful in teaching the RME website and its functions to participants, the team needed to understand how the site worked and the background

behind its making. To further their understanding of the RME website, the team researched interactive learning and its effects on children. They found that the use of computer-based technology is growing and expanding. Some well-known interactive learning sites for children use pedagogical characters and positive feedback to engage students. Similarly, the RME site uses these techniques.

Finally, to comprehend what a PD is and what it consists of, the IQP group researched what good and bad qualities of a PD are. This research showed that an effective PD should be a well-structured combination. It should have lectures that keep the audience's attention, interactive training sessions, and hands-on activities to apply what was learned in the training. In addition, participants like to have something to take away from the PD they attended and to be encouraged to reflect back on their experience to recall why they attended the PD. Conclusively, these topics helped the project team be knowledgeable in all relevant areas so that the project could be completed successfully by creating an effective PD.

Our first goal was to learn the workings of the RME website. Before we created the PD, it was important to have a full understating of the website and its functions. On the site, teachers can create a classroom to customize the activities they want to use for their students. The functions we needed to learn for our first objective included navigating the website, learning about the characters, and learning how to create and customize profiles.

Next, we created questionnaires, interviewed teachers, and analyzed the data. We recruited a total of 13 teachers for our PD, two of which decided not to participate due to location. Once we had participants, we created questions for the initial interview to meet our second objective. The interview included questions that helped gather information regarding the computer-based technology available at teacher's schools; their preferred learning styles; and previous experiences with PDs.

Using information from the interviews and research, we completed another goal by designing a PD to educate teachers about the RME website. This PD included an introduction to the website and project; free exploration time of the website; a structured tutorial about creating and customizing a classroom; tasks for teachers to practice what they learned in the tutorial; and a survey and focus group at the end.

To prepare ourselves for the PD with the teachers, we had a trial run with four peers. This helped us decide on time limits and explanation lengths for the PD. It also gave us an opportunity to become more familiar with the setup of the presentation, allowing us to script the PD.

We needed to develop a focus group and survey questions prior to holding the PD. We designed a short survey along with an outline for focus group questions. The questionnaire was broken up into sections to group the responses. These categories

addressed questions about general comfort, the tutorial, the PD, and implementation in school systems.

After completing the previous goals, we presented the RME PD to seven teachers. The PD was tailored to meet the different learning styles of the participants. Methods of collecting feedback included a survey and a focus group discussion.

Our next goal was to analyze the success of our PD using the feedback we collected. This information was needed from the teachers so that we could understand how they felt in regard to all of the aspects of the PD. The results from the survey and focus group were positive and constructive. After analyzing the results, we decided to remodel the PD.

Our final goal was to create documentation for our project. As we progressed in our project we worked on writing the corresponding sections of the paper. In addition, we documented any feedback as we received it.

The results of this IQP are categorized in five main areas: teachers' population, PD format, PD success, comparison of take home versus in person PD, and suggestions for improvement. The results for the teacher population included information about them as well as their opinions. For the most part, the teachers believe that computer-based technology is an asset in a child's education. We also learned how familiar the teachers were with technology used in the classrooms for educational purposes. Furthermore, the teachers answered questions about learning styles which the team interpreted for use when developing the PD.

The success of the PD was described using quantitative and qualitative results from the PD, the post PD questionnaire, and the focus group. The feedback received was positive and constructive. The questionnaires showed us that the participants were overall happy with the topics and lengths of the PD. One thing participants disagreed on was the time length of the first period of free exploration time in the PD. Their opinions realigned during the focus group when they all stated that they would be using the RME website in their classrooms. Some of the participants were particularly interested in using the site in their classroom right away because it related to the topics they would soon be covering.

The suggestions from the participants helped us to further improve our PD. The responses from the post PD survey showed us that the techniques and timings that we used were liked and effective. The teachers' opinions also demonstrated that the content, the background of the website and the areas covered by the tutorial, was sufficient and there wasn't anything they thought we had left out. The only recommendation was for the facilitator of the PD to ask that participants to focus

their exploration time on characters that do not appear in the tutorial. They suggested this so that the tutorial would not get boring for the participants.

Additionally, we got opinions from the two teachers that took part in the take home version of the PD. These helped us realize how substantial our tutorial and background information was on its own without the hands-on assistance of the facilitators. They both said that we provided enough background. Furthermore, both said that the PDF tutorial was very easy to follow and that they could easily create a new classroom on their own. These results only enforced the positive feedback that we had received from the participants that attended the actual presentation of the PD.

In summary, our goal was to educate teachers about the RME website. To complete this goal we developed and held a PD for K-4 teachers. The teachers who participated provided positive feedback in the follow up survey and focus group. We updated the script of our PD to include the one change the participants suggested. We recommend that facilitators use the full PD, not only the tutorial, to demonstrate the functions of the website. This is because the PD provides information necessary to understand and work the website. It also gives participants time to explore and practice exercises which teachers would not get out of the tutorial on its own.

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Introduction

In order for students to properly benefit from computer-based technologies, educators have to be trained to use and implement them correctly. The final goal of this Interactive Qualifying Project (IQP) was to design a professional development (PD) aimed to provide elementary school teachers with the expertise to implement the Reading and Math Explorers™ (RME) website¹ in their classrooms. Our mission statement and initial project goals can be found in Appendices A and B respectively. The initial and final timelines for completing our project objectives can be found in Appendices C and D.

RME was an eight volume, hard copy, supplemental curriculum for elementary school teachers to use. This program was developed by the office of K-12 Outreach at Worcester Polytechnic Institute. From this paper curriculum, a website was created to better suit the growing use of technology in the classroom. The RME website, which is located at <http://rmexplorers.org/>, was designed in a previous IQP.² The website was created to provide an alternative teaching method that educators can use in their elementary level mathematics and literature curriculum. This website includes multiple characters, each representing a different profession. Students can read the biographies and participate in reading and math based activities related to each character.

In today's society there is a high emphasis on education, particularly in the subjects of reading and math. These two skills are necessary because they are essential for any career path one chooses.³ Not only has this been seen in the general public and private schools, but also from elected officials trying to develop new plans to help the youth grow.⁴ An important factor in effective schooling is the teachers' ability to hold a student's attention. Computer-based technology is becoming a more common method of accomplishing the goal of keeping engaging students in learning.⁵ This IQP helps teachers incorporate an interactive website into their classroom. The students remain engaged due to the connection they make with the characters. The students relate to them because the characters are depicted as children.

The RME website is an example of educational computer-based technology in the classroom along with PowerPoint Presentations, projectors, and Smart Boards. If

¹ *Reading and Math Explorers™*. n.d. <http://rmexplorers.org>.

² Cerulli, Janese, Michael Ficarra, and Deanna Flaherty. *Reading & Math Explorers™ Website (IQP)*. Interactive Qualifying Project, Worcester, MA: Worcester Polytechnic Institute, 2010

³ National Research Council. *Guide to the National Research Council*. 2005. <http://www.lib.utexas.edu/taro/utcah/00358/cah-00358.html>.

⁴ Becker, Deborah. "At TechBoston, Obama Touts Using Technology In Education." 3 9, 2011.

⁵ Taylor, Robert W. "Pros and Cons of Online Learning - A Faculty Perspective." *Journal of European Industrial Training* 26, no. 1

teachers are not knowledgeable about using the tools properly, then the children do not receive the same experiences as other students.⁵ In schools nationwide, a popular way that teachers receive training is through PD. “Professional development should be understood as a job-embedded commitment that teachers make in order to further the purposes of the profession while addressing their own particular needs.”⁶ In the long run, knowledge that teachers attain through PD will enhance the learning environment for the students.

The project team performed background research regarding learning methods, interactive learning technologies, and PD to understand the topic. The team also learned to navigate and work the RME website from a teacher’s perspective through experimentation. After initial research the team created a detailed questionnaire about computer-based technologies used in the classroom and PD experiences. This was made in order to receive proper information from the teachers in the focus group.

Information from these questionnaires helped the project group to design the most practical PD for the curriculum. During the training session, the participants gained the necessary knowledge and skills to successfully utilize the RME website as an alternate resource in their curriculum. Following the program, the team administered a survey to teachers and held a focus group to acquire information for improving the PD. The follow up survey and focus group results showed that the PD was successful. Future PD facilitators can use our project and results to educate other teachers about how to navigate the RME website. This makes it so that teachers can successfully integrate the site into their classrooms for students to learn from.

⁶ Diaz-Maggioli, Gabriel. *Teacher-Centered Professional Development*. Association for Supervision and Curriculum Development (ASCD), 2004

Background

Professional development (PD) is used to help teachers improve their classrooms and curriculum with new or updated techniques as well as content knowledge. It is necessary to present and utilize a PD properly in order for the teachers to provide the best education for the children. Teachers need to know how students learn best so that they can properly prepare for each class.

Engaging students using tools such as visual and hands-on activities is useful because they can stimulate their learning experience and hold the students' attention. These involved activities are sometimes found as digital media; therefore, the teachers with little understand on technology need to be educated on how to use it. PD aids in educating these teachers so that they may exercise their new skills in the classroom. Knowing an educators learning style makes it possible to create a training session that will benefit them and their career the most.

We begin this chapter with a discussion of learning theories and learning styles. After this we review the Reading and Math Explorers™ (RME) website, as well as the motives behind transferring the curriculum from paper to electronic. Next, we go into detail about interactive learning and its educational value for children. Finally, the team examined the importance of professional developments in school systems.

Learning Theories

Learning is defined as any relatively permanent change in the way an organism responds based on its experience. Learning is a natural occurrence for all species, not just humans. The rate and ways that everyone learns varies from person to person. There are many different learning styles, and it is important to address those when teaching, even if the “student” is not a human.⁷ A spin on a classic feud between wolves and sheep can prove that all beings can learn. John Garcia and his colleagues fed a wolf a substance made from sheep flesh that was coated in a chemical to induce nausea. Later the researchers let a sheep into the wolf's habitat, knowing that the wolf would go right to the sheep. Once the wolf put its mouth on the sheep it withdrew and circled the animal. This is because the wolf associated the taste of the sheep with being sick earlier.⁷

Most of the theories of learning tend to share three common assumptions: experience shapes behavior; learning is adaptive; and learning is an ongoing process.

⁷ Kowalski, Robin, and Drew Westen. *Psychology*. 6. Hoboken, NJ: Wiley, 2010.

Experience shapes behavior means that most responses are learned.⁷ The Experiential Learning Theory states that experience is a huge role in the learning process. The laboratory method is an example of this theory because learning, change, and growth all take place within this setting. First the experimenter needs to collect the data followed by analyzing it, allowing them to improve the next set of the experiment. Figure 1 below shows the four stages cycle that relates to the topic that learning is conceived.⁸

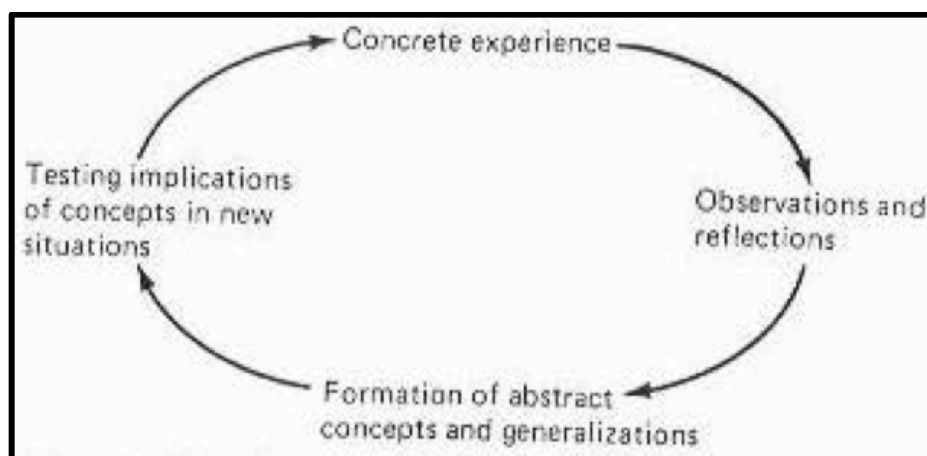


Figure 1: Experience four-stage cycle⁸

Learning is adaptive and “the environment naturally selects those behaviors in an individual that are adapted and weed out those that are not.”⁷ All behaviors caused by learning experiences may only remain for a short amount of time. This happens because only some behavior information is needed to survive and grow as a person. The learning experiences mentioned above are not only conceptual knowledge but also refer to learning when and how to behave in certain ways.

Learning is an ongoing process in the human life; it does not stop after childhood. Although it is an ongoing process, the ways in which adults learn are not the same as children. Adults are autonomous and self-directed. They need to feel as though they can direct themselves, and that class participation is available. Adults have already gained knowledge and experience of life, and they need to relate theories and topics to their own lives. These learners also are goal-oriented along with being relevancy-oriented, and need to be shown that what they are doing will further help them achieve their goal. Finally, these adult students are also practical and need to see the hows of everything, and why something is a good tool to use.⁹

⁸ Kolb, D.A. "Experiential learning: experience as the source of learning and development." In *Experiential Learning*, by D.A. Kolb. Englewood Cliffs, NJ: Prentice Hall, 2006.

⁹ Lieb. *Adult Learning*. Arizona Department of Health Services. 1991.

Although learning can be seen as a behavioral aspect, like above, it can also be seen as a cognitive one. According to Jeanne Ellis, Jean Piaget's development theory is "the single most global theory of intellectual development."¹⁰ Piaget's theory focuses on language; logical reasoning; moral judgments; and conceptions of time, space, and number. Piaget's theory, also called the Development Stage Theory, simply explains nature and how humans come to progressively obtain it, construct it, and use it. Piaget's research started when he became curious about the connections between philosophy and biology in the 1920's. This development theory states:¹⁰

- People are active processors of information.
- Knowledge can be described in terms of structures that change with development.
- Cognitive development results from the interactions that children have with their physical and social environments.
- The processes throughout which people interact with the environment remain constant.
- People are intrinsically motivated to try and make sense of the world around them.
- Cognitive development occurs in distant stages, with through processes at each stage being qualitatively different from those at other stages.
- The rate of cognitive development is controlled to some extent by maturation.

The first statement that is discussed by Piaget's theory is that "people are active processors of information."¹⁰ Piaget portrayed humans as being actively involved with their environment by acting and learning from the situations and events around them. He explained that people do not simply react to a situation around them, but investigate a situation and act upon what they believe is best.¹⁰ Piaget was able to prove this with a simple experiment involving his own eighteen-month-old son. First Piaget placed bread out of reach and a stick next to his son, Laurent. His child began to reach for the bread but when he realized it was too far he stopped. Next Piaget placed the stick in front of Laurent, but before the bread. Laurent used the stick to reach the bread. He tried to get the middle first and failed, but he realized he could grab the edge of the bread with the stick. Later on that day, Piaget placed a toy out of reach and a stick next to his child. Right away Laurent grabbed the stick and successfully reached for the toy.¹¹

The second and third topics in this theory state "knowledge can be described in terms of structures that change development" and "cognitive development results from the interactions that children have with their physical and social environments."¹⁰ These statements claim that scheme is the "basic structure through

¹⁰ Ormrod, Jeanne Ellis. *Human Learning*. 4. Princeton, NC: Merrill, 2004.

¹¹ Piaget, Jean. *The origins of intelligence in children*. New York City, NY: W W Norton & Co, 1952.

which an individual's knowledge is mentally represented.”¹⁰ Scheme can be represented as a class that holds information portraying specific actions or thoughts. An example that Ormrod provides is a child may have a scheme of grasping and uses it to grab objects. As a human develops, these schemes develop too. Schemes can include more information than before, but they can also adapt old information to work for new circumstances.

The next section of the theory states “the processes through which people interact with the environment remain constant.”¹⁰ According to Piaget, people interact with the environment in different ways depending on the information given. Assimilation information allows someone to know how to deal with a situation in an expected way. This is because assimilation is information that people can relate to.¹⁰ Accommodation, on the other hand, involves changing schemes to incorporate new information. Assimilation and accommodation are complementary processes. Situations need to be handled in assimilation so the individual can become acquainted with it before they start to modify it. However, learning begins with accommodation.¹⁰

Piaget believed that learning was a part of growing. He was able to explain why people grow intellectually, and how their learning styles mature over time. What is useful for someone when they start elementary school may not be as effective in high school, college, or even when they are in their career. However, for other people the same technique, just presented at a more mature level works fine. A lot of research has been done on how people learn. Some researchers have explained their findings by saying people learn with active learning techniques, such as brainstorming, visual webs, and role-playing. Other researchers claim people learn better because of their personal style.¹² The Index of Learning Styles is an explanation of these different styles.

Learning Styles

The Index of Learning Styles, developed by Richard Felder and Linda Silverman in the 1980's, is a guide to help people measure learning preferences on four dimensions.¹³ This guide was created as an online resource where people answer simple questions about their learning habits. The results from this questionnaire could be used to find ones preferences, to further help themselves. There are four groups of learning in this index: active and reflective, sensing and intuitive, visual

¹² Felder, Richard M., and Rebecca Brent. "Understanding Student Differences." *Journal of Engineering Education*, 2005.

¹³ Felder, Richard. *Index of Learning Styles*. 1984.

<http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html>.

and verbal, & sequential and global. The ideal learner would have a balance of each of these styles, which means a person would have resulted in the center of each group. Their result would look something like Figure 2. This figure shows that this person is able to learn almost equally in each of the styles. Although that would be useful, the likelihood of this being the case for everyone is not probable.¹³

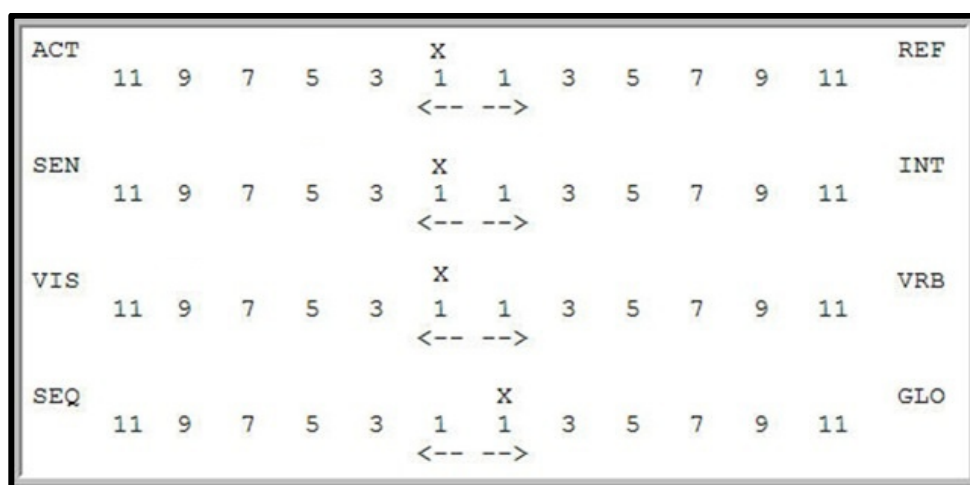


Figure 2: An example Index of Learning Style results¹⁴

The active and reflective learners' category is the first group in the Index of Learning Styles. Active learners tend to be the people who try and apply something new as soon as they can, such as an example worksheet, or explain it to others.¹⁵ These people strive when involved with group work and get bored in lecture if all they can do is take notes. It is highly recommended that active learners work in groups where people take turns explaining different problems. Another encouraged technique for active learners is to try to predict the information on a future exam.¹³

On the other side of this coin, reflective learners are more likely to sit down and think about the information before applying it. They like to make sure they understand everything and enjoy working at their own pace.¹⁵ It is recommended that reflective learners work alone. While studying and reading textbook chapters, reflective learners are encouraged to read a subchapter or subsection and take a moment to pause. In this pause they should try and reflect on what they just read and completely understand the how's, what's, why's, and who's before they continue reading.¹³

¹⁴ Felder, Richard, and Barbara Soloman. *Index of Learning Styles Questionnaire*. NC State University. n.d. <http://www.engr.ncsu.edu/learningstyles/ilsweb.html>.

¹⁵ Felder, and Silverman. "Learning and Teaching Styles in Engineering Education." *Engr. Education*, no. 78 (1988): 674-681.

The next category is sensing and intuitive. Sensing learners like facts, such as dates and other unarguable topics. These are the people who like solving problems in a step-by-step manner, and are usually good at memorizing facts. The easiest way for sensors to remember information is when they are able to connect what they have learned to actual experiences in the world. It is encouraged for these learners to speak with the professor and to try and find that connection to the world. If the teachers are unable to answer the questions, the learner should research this information on their own. These people also get angry when information on a test was not provided in class. In the mathematical world, these learners are “the algebra students.”¹³

Intuitive learners like to discuss the theory of how and why something happened. They learn best from new techniques and assignments being used in the classroom. Intuitive learners are also better at understanding the small details of a topic.¹⁵ If students are bored in a class where only the facts are thrown at them, they are encouraged to find the theory of the topic and to form opinions on it.¹³

Following sensing and intuitive, the visual and verbal category is another group in the Index of Learning Styles. A visual learner is someone who can take in a lot of information from pictures, charts, diagrams and timelines.¹⁵ For visual learners, taking notes in lists and then circling parts of the list helps that information stick in their minds. Making lists helps the visual learner focus on the information, and the circle helps to identify the important information. Another useful technique for visual learners is taking notes in multiple colors. This helps them relate certain topics later without having to reread everything they wrote from the class.

On the other hand, verbal learners take more away from words, both written and spoken.¹⁵ Working in groups can be helpful for verbal learners because hearing what others have to say can help them retain information.¹³ Group work is also useful for verbal learners because hearing many different explanations of a method or topic allows this type of learner multiple ways of processing the same information. Because of this, they can choose which reasoning makes the most sense for them. Another useful way that verbal learners use to absorb information is writing outlines or lists of materials being studied in their own words. Mentally saying and rewriting the words will help the information stick in their minds. Although most humans are strong in either visual or verbal categories, people learn better when both forms are present.¹³

The last group of this index is the sequential and global learners. Breaking down a problem or a situation in steps is a method that sequential learners use.¹³ For example, when faced with a math problem, they like to work through the problem step by step. Sequential learners need to see how each step fits into the next, or see things as a puzzle. A useful technique for sequential learners is to outline

information in the correct order; this is extremely helpful when the information is presented in an unorganized manner.¹⁵

Global learners need to look at the big picture. From this big picture they can pull together the smaller parts of the subject.¹⁵ Using the example above about math, global learners like to see the beginning step and the ending step. These learners like to know why these overall steps fit together, not why the individual steps are important. A useful technique that global learners use is staying on one subject for a while. Instead of studying for multiple classes a night, where a lot of information can be jumbled, it is suggested they remain on one subject until they completely understand it.¹³

As shown in the research above, everyone learns in different ways. Being able to understand and provide a program or lesson to suit all needs is necessary. The index of learning styles allows for a general balance of each of the four main topics.¹²

Reading and Math Explorers™ Website

RME is an interactive website designed and developed for kindergarten through fourth grade teachers to use in conjunction with their curriculum. The site has eight different animated pedagogical agents, which are life-like characters that display emotions, gestures, and dialogue when students interact with them. On the RME site, these agents are in the form of historically successful figures, as shown in Figure 3. The characters are displayed as children so that the student user can better relate to them. Included in this website are historical models such as Booker T. Washington, George Washington Carver, and Lillian Gilbreth. Each agent has a short background about their childhood and career, and there are related activities for the students to interact with.

Teachers can choose which activities they want to be available to students, allowing them to create specific lesson plans. When teachers log on, they can also make a new password and username for different “classrooms” and save separate settings for each group of students.

The RME website was created by a 2010 IQP group, based on a curriculum designed by the STEM Education Center.² The RME website was created to integrate technology into teachers’ lesson plans, and to help students improve academically in reading and math.

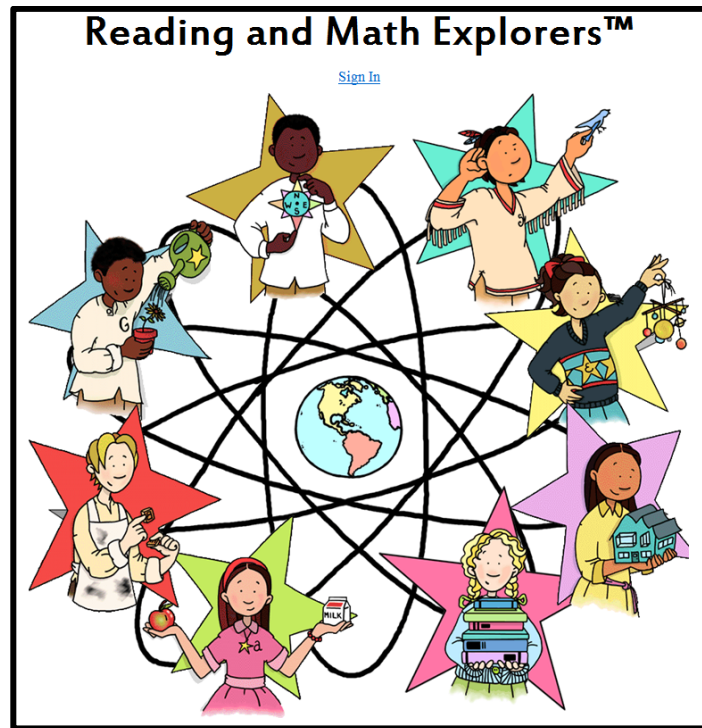


Figure 3: Homepage of Reading and Math Explorers™ Website

Interactive Learning

The use and knowledge of computer-based technology in society today is increasing. It is becoming more common for teachers to implement interactive learning, such as the RME site, in their classrooms using educational technology. In order to successfully use this type of technology in their classrooms, teachers must receive the proper training. This is important because in a survey conducted in 2006, it was reported that 87 percent of public schools nationwide provided students with “high quality digital content” via the internet, such as images, sounds, and libraries.¹⁶

Due to the growing use of computer-based technology, educational websites such as RME are becoming an important part of teachers’ curriculum. The RME website can be classified as interactive learning. Interactive learning is a type of computer-based technology that is beneficial to students. This involves a stimulus for the child, which provides information regarding the subject they are learning about. The stimulus is followed up by an assessment, such as multiple choice questions or a game. There are biographies of each character on the RME site, which are a stimulus

¹⁶ Wells, John, and Laurie Lewis. “U.S. Public Schools and Classrooms: 1994-2005.” *U.S. Department of Education Survey*, November 2006.

for the students. These are followed by a variety of relevant reading and math activities and games for the user to complete.

Interactive learning tools can be implemented as assistive material, or they can be used as main methods of teaching children.¹⁷ In order to properly stimulate the learner and keep their attention, interactive learning environments contain rich, diverse content. The reading and math activities on the RME site are entertaining for the student user, because they are fun and diverse.

According to an article from 2010 by Nicole Kramer and Gary Bente, animated pedagogical agents are often incorporated into simulated learning technology. They are life-like characters which display emotions, gestures, and dialogue when students interact with them. These realistic agents serve as either guides or learning companions to the user. On the RME website, 8 historical figures are represented as child-like pedagogical agents. These are the main characters of the website. Several learning benefits result from the use of such animated pedagogical agents. For example, they can provide task demonstrations, which are more useful than giving a student a set of instructions to follow. Animated pedagogical agents also incorporate visual and sensory aids, such as gestures, personalities, and emotions, all of which hold a student's attention. On the RME website, for example, the biographies of the agents are read out loud if the user clicks a "sound" button. For these reasons, animated pedagogical agents are important aspects of interactive learning.¹⁸

An example of an interactive learning website with animated pedagogical agents is www.pbskids.org. This tool has fun games in several categories, such as shapes, counting, letters, science, and nature. The games are aimed towards children in pre-school and kindergarten. They incorporate characters from kids' favorite television shows, such as Curious George and Sesame Street. The characters give the child a task, and if it is successfully completed, positive feedback is provided. For example, in the game "How Tall," children are shown a small object next to a larger one, and are asked how many of the smaller object equal the height of the larger object (Figures 4 & 5). If the child is correct, Curious George and The Man in the Yellow Hat congratulate them. Another game from the same website, "Super Grover in the Nick of Rhyme," helps children learn how to rhyme by giving them a scenario where they have to choose the object that rhymes with another object that they are looking for.

¹⁷ Pavey, Juliette, and Steven Garland. "The integration and implementation of a range of 'e-tivities' to enhance students' interaction and learning." *Innovations in Education and Teaching International* 41, no. 3 (2004).

¹⁸ Krämer, Nicole C., and Gary Bente. "'Personalizing e-Learning. The Social Effects of Pedagogical Agents'." *Educ Psychol Rev.* (Springer Science+Business Media) 22 (2010): 71-87.



Figure 4: User is asked how many tires tall is the truck.¹⁹

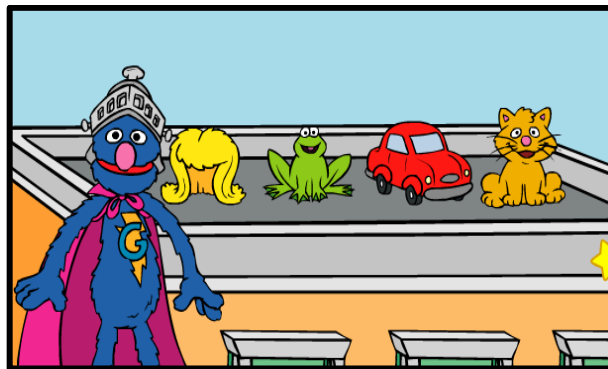


Figure 5: User is asked to choose which object has the same word ending as “hat”¹⁹

Interactive learning has several positive outcomes when used to educate children. One important positive feature of a simulated learning environment is that it provides teachers with a new, effective means to instruct and educate students.²⁰ According to a study done in 2004, by Pavey et al, this method of teaching also holds students’ attention longer than a lecture, because it is providing them with entertaining stimulus.¹⁷ The interactive learning cannot be too complicated and overwhelming, because this can distract the child from the task they are faced with. As long as the display and content of the interactive technology is balanced, there will be a positive outcome.²⁰

¹⁹ Public Broadcasting Service (PBS). *PBS Kids*. 2012. <http://pbskids.org/>.

²⁰ Deubel, Patricia. "Game on! Now educators can translate their students' love of video games into the use of a valuable, multifaceted learning tool." *Technological Horizons In Education Journal* 33, no. 6 (1 2006): 30.

While interactive learning has its positives, there are also a few negative aspects associated with it. This teaching method relies heavily on computer-based technology, which can result in a problem. If a teacher is not educated on how to use the technology involved to its full extent, the students will not completely experience the effectiveness of the program.²¹ Interactive learning is a change to a teacher's normal curriculum, and they may not always be open to that change. In order for interactive learning to be successfully implemented in the classroom and for teachers to accept this change, they need to receive the proper education regarding how to use this tool.²¹

Professional Development

According to Diaz-Maggioli, professional development is an activity that teachers often dread and find tedious.²² It is usually only seen in a positive light by the students because they have no class. However, whether the teachers like or dislike the workshops that they attend, all of the programs have the same idea in mind: to improve student-learning.²²

"Professional development plays a key role in addressing the gap between teacher preparation and standards-based reform; it is a key focus of U.S. efforts to improve education."²³ Better educating the teachers is one approach for improving the academic success of students. "An effective teacher enhances student learning more than any other aspect of schooling that can be controlled by the school."²⁴ They need to be prepared to implement various skills and programs in their classrooms in order to provide the most valuable learning experience for the students. These lessons usually come in the form of PD or workshops. This is shown by "the BES [which] is an analysis of 97 studies of professional development that led to improved outcomes for the students of the participating teachers."²⁵

²¹ Taylor, Robert W. "Pros and Cons of Online Learning - A Faculty Perspective." *Journal of European Industrial Training* 26, no. 1 (2002).

²² Diaz-Maggioli, Gabriel. *Teacher-Centered Professional Development*. Association for Supervision and Curriculum Development (ASCD), 2004.

²³ Birman, Beatrice F., Laura Desimone, Michael S. Garet, and Andrew C. Porter. *Designing Professional Development That Works*. n.d. http://exitportfolio-robertson.wiki.westga.edu/file/view/designing_professional_development_that_works.pdf.

²⁴ Scharberg, Klea. "Improve Student Learning Through Teacher Effectiveness." *The Whole Child Blog* (ASCD), October 2011.

²⁵ Timperley, Helen. *Teacher Professional Learning and Development*. Imprimerie Nouvelle Gonnet, 2008.

PD needs to be run appropriately for the audience to absorb the information being presented. Traditional professional developments tend to be a burden to teachers because facilitators lead on the basis that educators need to be “fixed.”²² The administrators creating the programs will sometimes disregard the ideas teachers have and focus only on what they see as important when they might not be the most knowledgeable on what is needed. The training sessions are often in the form of lectures with no interactive activities or discussions to keep the participants’ attention or interest.²² Other characteristics of traditional PD can be found in Table 1 (below).

Table 1: Traditional vs. Visionary Professional Development²²

1.1 Traditional vs. Visionary Professional Development

Characteristics of Traditional Professional Development	Characteristics of Visionary Professional Development
Top-down decision-making A “fix-it” approach Lack of program ownership among teachers Prescriptive ideas One-size-fits-all techniques Fixed and untimely delivery methods Little or no follow-up Decontextualized programs Lack of proper evaluation Pedagogical (child-centered) instruction	Collaborative decision-making A growth-driven approach Collective construction of programs Inquiry-based ideas Tailor-made techniques Varied and timely delivery methods Adequate support systems Context-specific programs Proactive assessment Andragogical (adult-centered) instruction

In addition, Diaz-Maggioli listed characteristics of visionary PD. These features will be considered by the project team when they design the RME PD as they are relevant and correlate to the common human learning styles. For instance, Table 1 lists collective construction of programs, collaborative decision-making, and context-specific programs; all of these will be considered when designing a PD for the RME.

“The most effective professional development model is thought to involve follow-up activities, usually in the form of long-term support, coaching in teachers’ classrooms, or ongoing interactions with colleagues.”²⁶ Reflection upon the training is

²⁶ Berme, Jennifer, and Suzanne M. Wilson. "Teacher Learning and the acquisition of Professional Knowledge: An Examination of Research on Contemporary Professional Development." Chap. 6. American Educational Research Association, August 29, 2009.

important because it helps the participants look back on what the workshop did for them and why they attended it.

Conclusion

In conclusion, the project team learned how to design a PD to demonstrate the RME website through extensive research. In this research we found that there are two types of learning: cognitive and behavioral. We also discovered there are several different types of learning styles. The research helped us understand the function and navigation of the RME website. We were able to relate this site to our findings on interactive learning. For example, we found information about pedagogical agents which are incorporated into the RME website. Finally, we learned about the positive and negative ways of executing a PD. We bring all this information together to design a PD that tailors to all learning styles, incorporates the interactive RME website, and includes the most important aspects of the PD.

Methodology

Introduction

The goal of this project was to design a professional development (PD) aimed to provide elementary school teachers with the expertise to implement the Reading and Math Explorers™ (RME) website in their classrooms. Teachers are always looking for new and exciting ways to improve students' learning experiences. Educational methods that use computer-based technology are popular tools that engage and teach students. Not all teachers are experienced with computer-based technology; thus a plan of action helps them better utilize these tools. From information gathered at the interviews we conducted, teachers have expressed interest in attending PD is focusing on computer-based technologies. Our PD provided teachers with the Reading and Math Explorer™ curriculum, which teachers can use in their classrooms. Teachers were educated using a hands-on approach.

We completed the following objectives in order to create a PD that is most beneficial for teachers.

- Learn the Reading and Math Explorers™ site workings
- Create questionnaires, interview teachers, and review data collected
- Design professional development
- Pilot of Reading and Math Explorers™ professional development with peers
- Develop focus group and post professional development survey questions
- Conduct Reading and Math Explorers™ professional development
- Interpret feedback
- Design of final professional development

More details on how these goals were met are explained further in this section.

Learn the Reading and Math Explorer™ Site Workings

In order to work on the project, it was important to have a full understating of the website and its functions. Elementary school teachers can use the RME website as an interactive way to connect reading and math with historical figures. The site was designed to be used as a supplemental resource to the K-4 curriculum. The teachers have the ability to create a classroom to customize the activities they want to use for their students. We discussed this website further in our background chapter. The functions we needed to learn included navigating the website, learning about the characters, and learning how to create and customize profiles. This was necessary so

that we could create a successful PD to educate the teachers on the website's workings. To ensure that the students were also benefiting from this PD, the team needed to understand the website from a student's perspective in addition to a teacher's.

While navigating the website, we encountered multiple problems:

- Trouble creating a classroom
- Grammatical/spelling mistakes
- Log-in issues
- Problems with activities

These issues are addressed below, with a description of each problem and how it was resolved.

The initial problem that we encountered was that each team member had trouble creating a classroom, because no activities were being saved. At first we thought that this was due to the site's back-end design. Later we discovered we did not know the steps to complete this process. To correctly execute this task, the webmaster provided us with a set of instructions. These instructions can be seen in Appendix E. Once we had the instructions, we were able to follow them to successfully create a customized classroom.

Although the previous error was due to lack of knowledge of the site's working, the second type of problem was website faults. Website errors were encountered in two areas: text and technology. Textual problems were easier to fix, because they mostly involved spelling and grammar. These faults could sometimes be found in the biographies and activities, but they mostly appeared in the glossaries. To correct the textual errors, the team contacted the webmaster of the RME website. After the first correspondence with the webmaster, many but not all of the visual errors had been addressed. We submitted a second request for updates and the webmaster fixed the new errors.

Other complications were not as easy to overcome. Although update requests were sent to the webmaster, due to time constraints these problems could not be fixed as quickly as textual errors. The first time we tried to navigate the website, the sign-in button on the home screen was not available. This error was easily fixed, however a second problem came up. This time the sign-in button was available, but when a user logged in, the home screen did not register that they were in the system. When navigating to another page, it did register that the user who had logged on was signed in. Eventually this problem was fixed, but a new one arose. When a user signed in, the following message appeared on the main screen: "Signed in as Amanda Piscopiello." When users navigated to another page, the correct name appeared. Again this problem was fixed in time for the team's PD.

The final problems encountered, however, were not corrected in time for the PD. Even though the website is still under development, we had to work around some technical glitches to complete our project. While putting together the tutorial, the project group investigated the activities. For some of the characters it was apparent that activities did not work correctly. For example, in Booker T. Washington's activity, "Create New Words," approximately 130 words a child would know were entered and few were identified as correct. Another example was that a message saying "Good Job" did not appear when the game was completed, as can be seen in Figures 6 and 7. This was an issue because usually when a game is finished, "Good Job" is displayed at the top of the screen to indicate the completion of the activity. Along with the activities not working to their full potential, there were glitches that directed users to incorrect pages. An instance of this type of problem occurred when a logged-in student clicked on "next activity" after completing the last game in the sequence. This would bring the user to a random activity under a different character. When the last activity for a character is completed, the "next activity" button should not appear at all. Although these were not fixed in time for the presentation, the team reminded the participants that the site was still under development and everything was still being worked on.



Figure 6: Word search where "Good Job" does not appear after completing the activity.



Figure 7: Sequencing where “Good Job” does appear after completing the activity.

Create Questionnaires, Interview Teachers, and Review Data Collected

In order to complete the next objective, we had to recruit a group of teachers willing to participate in our project. To do this, we wrote an email, found in Appendix F, which our advisor sent out to a list-serve of teachers. These emails, included a short description of the project, and why the team was doing this. It also included information about a general timeline, and details regarding the interviews and PD. When teachers responded, the team made sure that they had not been involved with RME before to ensure they had a new perspective on the project. We received interest

from a total of 13 educators; two of which decided not to participate due to location. Their contact information can be found in Appendix G. We regularly sent out e-mail updates about the project to make sure the teachers would know what to expect (Appendix H).

In order to choose which questions to include in the interview, we considered the information needed for the PD. The questionnaires needed to be specific and clear, so that the teachers knew exactly what they were being asked. Questions were broken down and organized into subsections so that every topic was covered. After the questions were created, they were grouped into the three general sections previously mentioned.

We created an interview that included questions that helped gather information regarding the computer-based technology available at teacher's schools; their preferred learning styles; and previous experiences with PDs (Appendix I). All of the information gathered from the interviews was important to the project in different ways. We needed to know about computer-based technology available to teachers because it allowed us to determine how easy it would be for teachers to actually use the website with their students. Information regarding teachers' preferred learning styles was relevant because it helped the project group to create a PD that was tailored to meet everyone's needs. This made it so that all of the teachers would get the most out of the PD. It was necessary for us to know about previous PD experiences so that methods that had worked in previous programs could be considered when creating the plan.

Before interviewing the teachers, the team needed to get the questionnaire approved by the Institutional Review Board (IRB). To receive approval for this, the project group submitted a copy of the questionnaire and a methodology for how the questions were being used, and an informational form (Appendix J). Our submission to the IRB was approved, so we were allowed to begin interviewing teachers.

The interviews were conducted over a two week period, from January 17th through January 29th. We initially had 11 teachers scheduled for interviews; however, one informed us that she could no longer take part in our project due to a busy schedule. Eight of the teachers came to Worcester Polytechnic Institute for the interview. We conducted one interview over the phone, and one via Skype. The interviews took 15 to 30 minutes each. One team member asked the teacher the questions, while the other two took notes on the responses. Following the completion of all interviews, the responses were typed up and compiled into an excel spreadsheet for easy analysis (Appendix K). This data helped us to determine the most effective way of running the PD to address the needs of all of the participants.

From the results of the initial interview, we learned that all teachers had access to computers, and already used some types of computer-based technologies in

their classrooms. It was clear that the teachers preferred hands-on PDs, with an agenda, and lots of explanation. They also liked getting handouts to take home with them and refer back to. The results also showed that most of the teachers were visual learners, and liked trying examples after they were taught something. We took all of the interview results into consideration when creating the PD.

Design Professional Development

We used information from the interviews and research to design a PD to educate teachers about the RME website. This PD includes an introduction about the website and project; free exploration time of the website; a structured lesson on creating and customizing a classroom; tasks for teachers to practice their new knowledge of the website; and a focus group at the end. After completing this PD, the teachers learned how to create and customize classrooms using the website.

Because computer-based technology is becoming more influential in children's lives, it is an effective learning tool. It is important to provide educators with the proper understanding of how to use this type of technology in their classrooms. Once the teachers obtain this knowledge they can demonstrate their curriculum in many ways. Our PD regarding the RME website is an example of how teachers can be familiarized with computer-based technology.

From our initial survey it was found that most participants prefer a visual type of learning. This allowed the group to anticipate what type of teaching style would be best for the PD. We decided to create a tutorial with pictures as visual aid. We also found that our participants ranged on the scale of technical knowledge, but all had some experience with using computer based technology in their classroom. This meant that the PD had to keep the interest of those whom were faster paced. It also needed to be as instructive and straight forward as possible in order to accommodate those less practiced.

We also learned from the surveys that teachers liked professional developments that were hands on, with examples for them to try on their own. This gave us the idea to add a practice example at the end of the tutorial, so that the teachers could try what they had just learned, and ask questions about it. We also decided that allowing the participants to have time to explore the website on their own before starting the tutorial would make them feel more comfortable with it.

The initial step in designing the PD was to create a simple layout which included the general topics and activities that the team wanted to go over during the presentation. The layout, found in Appendix L, included:

- Introduce the team, the project, and the website
- Allow the teachers to explore the site
- Walk the participants through a tutorial
- Ask them to do some practice work on their own
- Answer any questions teachers have

We chose to include these specific steps because the first few provided the PD with good stepping stones into learning the website. These stages were used because they also highlighted different learning styles found in our research. The final steps helped the participants to become more familiar with the RME website and its workings.

After creating the general outline, we created a step by step tutorial of one character, Lillian Gilbreth, to create the hands on section of our PD. The tutorial, found in Appendix M, consisted of signing in; going through the various pages; creating a classroom; selecting activities to customize that classroom; and signing in to the classroom to experiment with the activities. We included this tutorial in the PD because most of the teachers expressed interest in seeing how to do a task, and then being allowed time to try it for themselves.

After completing our PD, the final outline was as follows:

- Introduce ourselves and the project
- Explain why we are doing the project
- Remind teachers about:
 - Follow up survey
 - Focus group
 - Reflection
- Brief introduction of website
 - Mention characters and why they are important
- Exploration time
- Tutorial
- Ask teachers to set up a new classroom
 - Use Ellen Ochoa, specify three activities to set up
- Additional exploration time
- Recap of the program and what they have learned
- Follow up survey
- Focus group
- Conclusion, thanking teachers for participating

The full, scripted version of our PD can be found in Appendix L.

Pilot of Reading and Math Explorers™ Professional Development with Peers

Prior to presenting to the group of teachers, we held a PD attended by four peers. Our group believed this event would help us decide on time limits and explanation lengths of the PD. We also wanted to have a practice event to become more familiar with the setup of PD presentation, which eventually helped us script the real version.

We started this trial PD with a short background on the RME curriculum and website. The participants were then given 15 minutes to review the website. After the brief introduction and exploration time, one of our team members walked the trial participants through the first official draft of the tutorial. Once the tutorial was completed, we asked our peers about any changes we could make that would help people better understand the website. Our peers gave us great advice, such as slightly reordering the tutorial to make it flow better. Another peer suggested adding new concepts to clarify parts of the website. The questions they asked helped us to realize we were missing key information in the introduction so we were able to add this to avoid later confusion.

The team encountered additional website problems in the process of this trial PD. During the pilot session, some participants found a few more technical glitches in activities on the website, and some grammatical errors. The webmaster easily fixed the spelling errors before the PD with educators. One technical glitch we found was that only one class could be created at a time. This was discovered when each participant tried making their own class, but only one class was accessible. To continue on with the presentation, each of the students signed into the working class. This limitation could not be fixed before the event with the teachers.

Develop Focus Group & Post Professional Development Survey Questions

To record feedback immediately after the PD we designed a simple survey along with an outline for a focus group. The questionnaire was split into sections to better guide the responses. These categories consisted of questions about general comfort, the tutorial, the PD, and implementation in school systems. The individual questions were written to make it easy for the participants to answer and to provide us with the feedback about the PD. The full survey and set of focus group questions can be found in Appendices N and O, respectively.

We asked the first set of five questions, about general comfort with the website and PD, in order to gauge how much information the participants absorbed. The next few questions were focused on the PDF tutorial document. The project team sought

this information from the teachers to see if there were any improvements that would need to be made to the tutorial. In order to get feedback about the PD as a whole, the next eight questions were developed. The questions were regarding amount of background about the website; length of the introduction; amount of time allotted for exploration of the website; pace of the tutorial walkthrough; length of the conclusion; and comfort in creating a new classroom. The final section of the questionnaire covered the topic of implementing the website curriculum into the teachers' classrooms. This would give us an idea about how closely it coincides with their curriculum and how interesting the website is to them and their students.

The questions for the focus group were developed to lead the teachers into an open discussion where they could provide feedback. We chose to use a focus group because it would allow the teachers to speak in a casual conversation and bounce ideas and thoughts off of each other. We started off by asking the teachers to think about participating in the PD in a different mindset, such as a less computer tech-savvy person. This gave us feedback on how to best help them be successful in using the RME website. Next, we asked how many of them planned on using it in their classroom. We followed that by asking how to overcome the reasons that teachers wouldn't want to use the website in their classrooms. This information would give us a better idea of if it was due to the PD, or if it was because of the information in the curriculum. Furthermore, we planned to ask the participants how they would incorporate this learning tool with their students. This information could be portrayed by the facilitators of a PD in the future to encourage use of the website. Finally, the team wanted to discuss any areas of concern the teachers may have had with the PD. This time allowed for any other comments as well.

Conduct Reading and Math Explorers™ Professional Development

We presented the RME PD to seven teachers in order to gain feedback and improve the PD. The teachers attended the two hour PD session on February 20th, 2012. A survey and focus group discussion at the PD, as well as a follow-up reflection, were all methods of collecting feedback. To ensure the success of this event, we had to script each section and create an agenda that everyone could follow along with. We also had to prepare two packets with all the necessary information for each participant. The first packet, which was given to the participants when they walked in, included the agenda; the teacher's login information; and nametags. The agenda can be found in Appendix P. The second packet, given out after the second exploration period, included the stipend form (Appendix Q) and post PD survey (Appendix N).

The PD was tailored to meet all the different learning styles of the participants. Teachers started to arrive at 6:30 PM to settle in. During this time food

and beverages were provided. By 7:00 PM six of the eight participants were in attendance. We called the other two, one was running late and the other teacher's number was incorrect. Since we did not want to waste any time, we started the program. The structure of our PD included:

- Twenty minute introduction
- Fifteen minute free exploration time
- Fifty minute tutorial and exercise
- Fifteen additional minutes free exploration time
- Fifteen minute recap and survey
- Twenty-five minute focus group and conclusion

The times above were the approximations made due to all the information we were able to collect earlier in our project. We wanted to make sure these agenda items were given more time than needed in order to address any questions that arose. We started the presentation at 7:05 PM and it was concluded at 8:54 PM, saving twenty-six minutes throughout the night. One IQP group member facilitated the introduction; the second ran the tutorial; and the third lead the focus group and conclusion.

During this PD the teachers also found a few technical errors. We were again faced with the problem that only one classroom could be accessible at a time. We reminded the educators that the website was still under constructions but we would gladly accept any suggestions or comments they had about it. Another suggestion that was made multiple times was that the definitions were more difficult to understand than the words they were defining. This topic is further discussed in the results section.

Of the nine teachers left in our PD process, seven were able to attend the session on February 20th. One of the two absent teachers informed us before this date that she could not attend, but the other teacher did not let us know until we contacted her the next day. Because both teachers still wanted to be part of our project, we asked them to try the tutorial on their own and provided us with feedback.

Interpret Feedback

Feedback from the PD was extremely useful when it came to analyzing the PD. This information was needed from the teachers so that we could understand how they felt in regards to all of the aspects of the PD. The survey questions were created and worded to follow two guidelines: easy to answer and simple to analyze.

The results from the survey and focus group were positive and constructive. Using the answers to the questionnaire, we could envision the PD through the eyes of the participants. For example, knowing that teachers were comfortable with the timing of each part of our PD shows that they were not bored.

The questions from the survey are represented in our report as tables, graphs, or text. These representations and their explanations can be found in the results section of the paper. Additionally, the information gathered from the focus group and the open-ended questions on the survey was used as support for our results and recommendations.

Three weeks after the completion of the PD, we mailed the teachers a short reflection prompt. This included questions about the program, and how they have used the RME website in their classrooms since. The information gathered from the reflections let us know the teachers were able to create classrooms and follow the tutorials on their own. Ultimately, it demonstrated that our PD was successful.

Design of Final Professional Development

From the information compiled throughout the post surveys, focus group, and reflections we were able to decide how we should remodel the PD. Due to the majority of the responses from the teachers being positive, we did not need to make major revisions to our project. The only suggestion made was to make sure to ask teachers not to look at Lillian's chapter during the first free exploration time, because she is the focus of the tutorial. In order to do this, we added a line to the script mentioning this.

Results

In this chapter, we discuss the results of each aspect of our Interactive Qualifying Project (IQP). We first talk about the teacher population and what information we gathered from them. The next part of our project covered in this chapter is the format of this professional development (PD). Following this, we discussed the success of the Reading and Math Explorer™ (RME) PD. The next section discussed is the suggestions for improvement of the PD. Finally, we mention the results of teachers who completed the tutorial on their own.

Description of Teacher's Population

Before we created our PD, we conducted an initial interview with the teachers who planned on participating in our project. The interview questions and responses can be found in Appendices J and K, respectively. The interviews were conducted over a two-week period in late January of 2012. Eight teachers came to WPI for individual interviews, one interview was conducted over the phone, and another took place via Skype. A single IQP team member was the leader for each interview, and the others were note takers.

The ten teachers who came to an interview at Worcester Polytechnic Institute all taught elementary aged students in Worcester County. These participants taught all levels from kindergarten through sixth grade. One participant was a librarian at a local school. Five of the original teachers came from the same school. Participant 10 only attended the original interview and Participants 8 and 9 did the tutorial on their own time.

One section of questions covered in the interview involved the use of computer-based technology. The data collected from this portion of the interviews showed that all ten teachers had access to computers and internet at school, and 40% of the teachers had access to enough computers for each student to use, as seen in Figure 8. Four teachers said that their schools had “laptop carts” that were transported to classrooms. Four other teachers had access to a computer lab. All ten teachers said that it required less than a week to book computers at their school to use. The information gathered from this part of the interview also showed us that all teachers used types of computer-based technology as part of their curriculum in some way (Figure 8). These statistics back up the idea that the use of computer-based technology in school curricula is increasing¹⁶, as discussed in the background section.

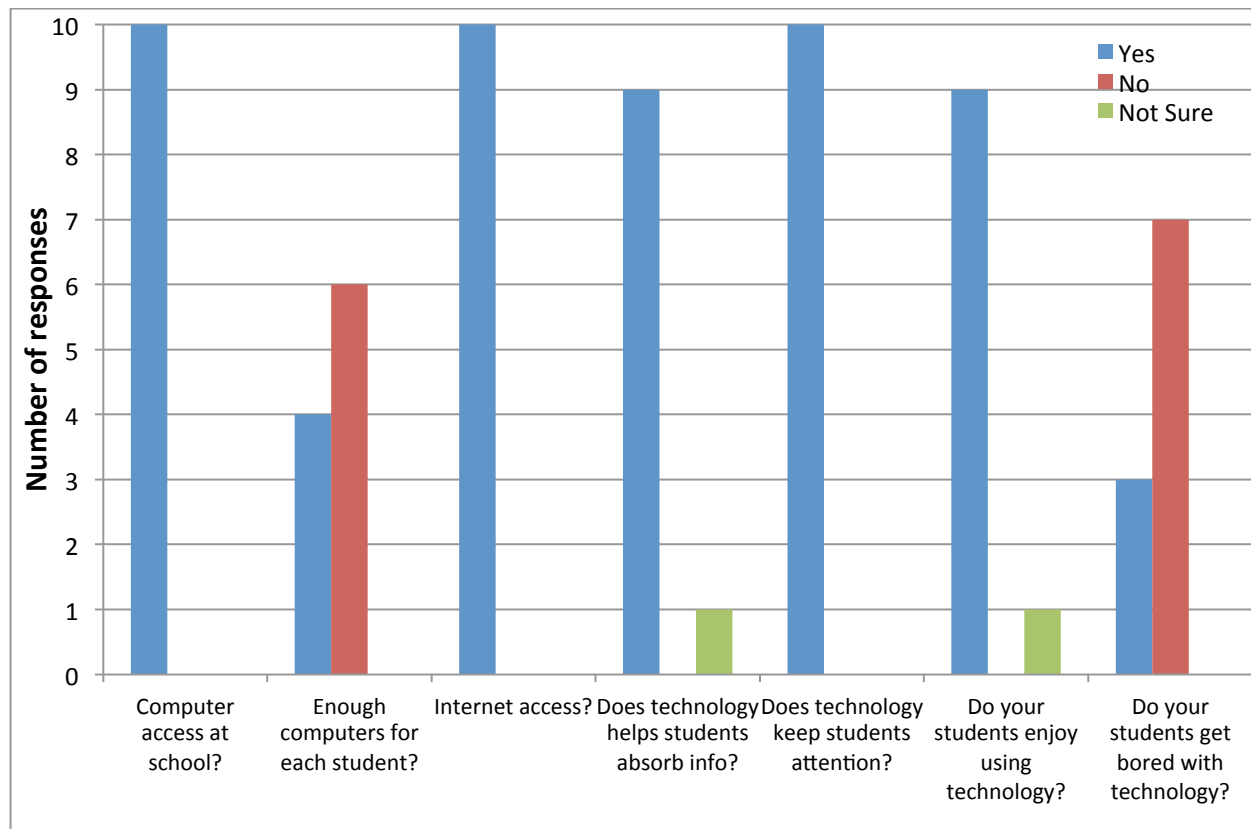


Figure 8: Teachers responses to questions regarding computer-based technology. Ten teachers were interviewed.

During this part of the questionnaire, we also gathered teachers' opinions about how students respond to technology (Figure 9). When asked if technology holds students attention, 10/10 teachers answered yes. One teacher said "*Using computers keeps their [the students'] attention, and the interactive qualities keep their attention.*" Through research, we found similar concepts, including that computer-based technology stimulates students, therefore holding their attention. Nine teachers said that their students enjoy when technology is used in the classroom, and one was not sure. This is backed up by research which stated that children are excited when using computer-based technology because they are provided with a positive stimulus after completing an activity. Participants said that they think technology is a large part of students' lives in the world today, and they grow up learning how to use it. Because of this, they benefit greatly from the use of computer-based technology in school. This information was beneficial to us because it showed us that the participants think positively about the use of technology in their classrooms. It also confirmed a lot of the ideas we found during the research stage of our project.

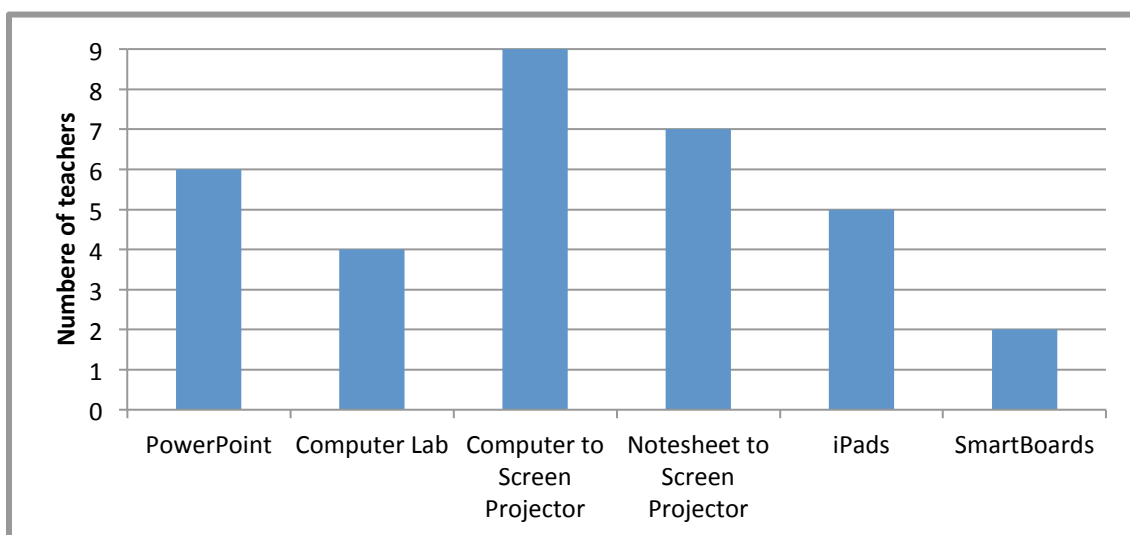


Figure 9: Types of computer-based technologies currently used in the classroom. Teachers were asked to check all that they used.

The third section of the interview addressed the participants' learning styles in order to determine a structure for our program. We needed to make sure all of the learning styles described in the research section were covered by our PD. As seen in Figure 10, the teachers participating in our PD represented multiple learning styles. Results showed that nine out of ten of the participants were visual learners. Eight out of ten teachers preferred working in groups over working alone, and nine out of ten teachers liked to try example problems for practice after learning a concept. Overall, the teachers' responses to the questionnaires aided us in creating a PD that was most beneficial to the participants by taking these preferences into account.

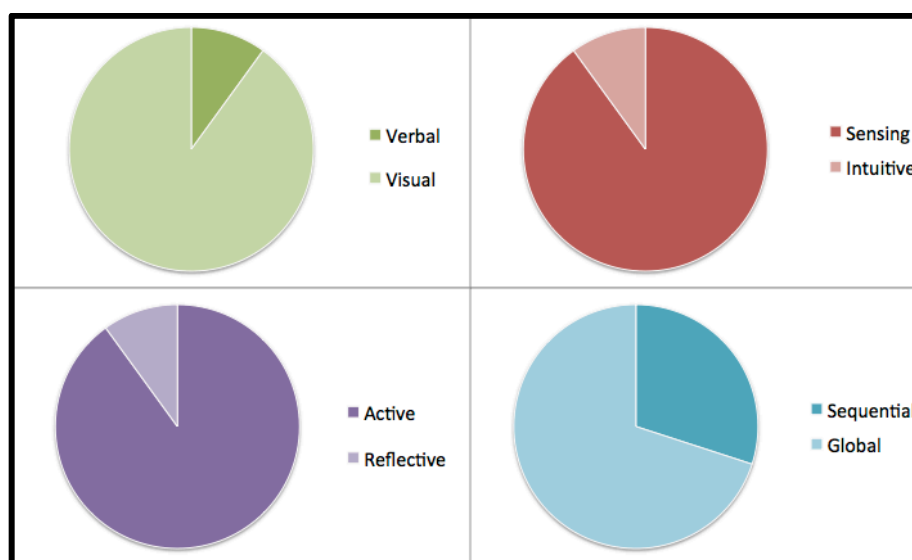


Figure 10: Participants' learning styles distribution.

Professional Development Format

The PD format was created based on topics we researched, responses to the initial interviews, and suggestions from our trial PD. To make our PD successful, we based its design on the teachers' opinions about their previous experience with PDs. We learned that our PD should be hands-on, provide background about any tools they would be using, and include a timeline to follow along with. To cover all of these areas, we included an agenda for the PD, an introduction about the website, and a tutorial for teachers to follow.

Through research, we know that visual learners prefer to see pictures to help them understand concepts. We knew that majority of our participants were in the visual learning category because of their responses on our initial interview. In order to accommodate this type of learning style, we created a visual tutorial that included pictures of each step, as well as written and verbal instructions, so teachers could easily follow along. In addition, we learned that it would be beneficial to give teachers some exploration time of the website before we explained how to use it. The interview responses suggested that we give the teachers a task to complete, after they learned how the website worked, so that they could practice what they just learned.

When asked about their experience with previous PDs, teachers mentioned that they preferred hands-on PDs. Therefore, we designed our PD to be more hands-on to accommodate these preferences. For example, we made a section of the PD, following the tutorial, which provided teachers with an example problem. This allowed them to practice what they had just learned. The participants' interviews made us realize that we also needed to create an environment for the teachers to interact with their peers. We decided that the best way to encourage group work and interaction was to continually prompt the teachers to check with the person sitting next to them to make sure they were on track with the tutorial.

When commenting on their experience with previous PDs, teachers also said that they preferred to attend PDs that they could take information away from and immediately implement in their classrooms. One teacher said that she liked to take things she learned "*straight from training to the classroom.*" Participants also mentioned that they learned more from a PD when they were given handouts that they could refer back to later. From this, we decided that we needed to provide the teachers with a copy of the tutorial so that they would have a reference if they forgot how to perform a task. We also provided a username for each teacher, so that they could practice using the website during the session, as well as start using the website promptly in their classroom.

From our trial version of the RME PD, we received the following suggestions:

- More background about the website and its purposes. This information would help explain why some things are being done in the tutorial.
- Re-order the tutorial so that all parts of the website are visited and experienced first. Creating a classroom should follow this.
- Teachers should get their own user name.
- Encourage more questions because teachers will be more interested than the trial participants since it is their livelihood.
- Anticipate questions ahead of time, and work them into the presentation.

We took these suggestions into account when designing our final version of the PD. Another factor we took into account when creating our PD was the time allotted to run the session. We planned on it lasting for about two and a half hours. We found that this would be a good amount of time, given the timing of the specific sections of the whole PD. The PD actually lasted a little less than two hours versus the two and a half hours we had anticipated.

In our case, the PD had a few setbacks in some sections, but since the rest of it went pretty quickly, we were able to dismiss the participants before our estimated end time. The timing of the individual portions panned out a little differently. For instance, the PD introduction didn't start on schedule due to some parking limitations as well as one late arrival. However, each portion of the PD was running ahead of schedule, and we completed the PD in less time than we had planned for, as seen in Table 2.

Table 2: Amount of time for each section of the PD

Section of PD	Planned Amount of Time	Actual Time Spent
Introduction	20 minutes	12 minutes
Exploration Time	15 minutes	15 minutes
Tutorial + Practice Exercise	50 minutes	33 minutes
Second Exploration Time	15 minutes	16 minutes
Post PD Questionnaire	15 minutes	10 minutes
Focus Group + Conclusion	25 minutes	20 minutes
TOTAL TIME OF PD	2 hours 20 minutes	1 hour 46 minutes

Success of Professional Development

After completing the PD, we administered a survey and held a focus group to gather teachers' feedback on the experience. The first part of the survey was formatted so that the teachers could answer questions on a scale of one through five. A one represents least/strongly disagree; a five represents most/strongly agree. The questions asked were:

- How comfortable are you using a computer and browsing a website?
- How knowledgeable do you feel about the purpose of RME after this PD?
- How capable do you feel about navigating the website after this PD?
- How would you rate the capability of your fellow teacher in navigating RME?
- How comfortable would you be training another teacher on how to use RME?

The results from these questions are shown in Figure 11. The survey results also indicated that 100% of the teachers felt that the tutorial was easy to use. All teachers also commented that the tutorial was clear. One teacher said she liked the “*step by step instructions with pictures*,” and many teachers seemed to agree with this opinion. This helped us to determine that the tutorial portion of the PD was successful in showing the teachers how to navigate the RME website.

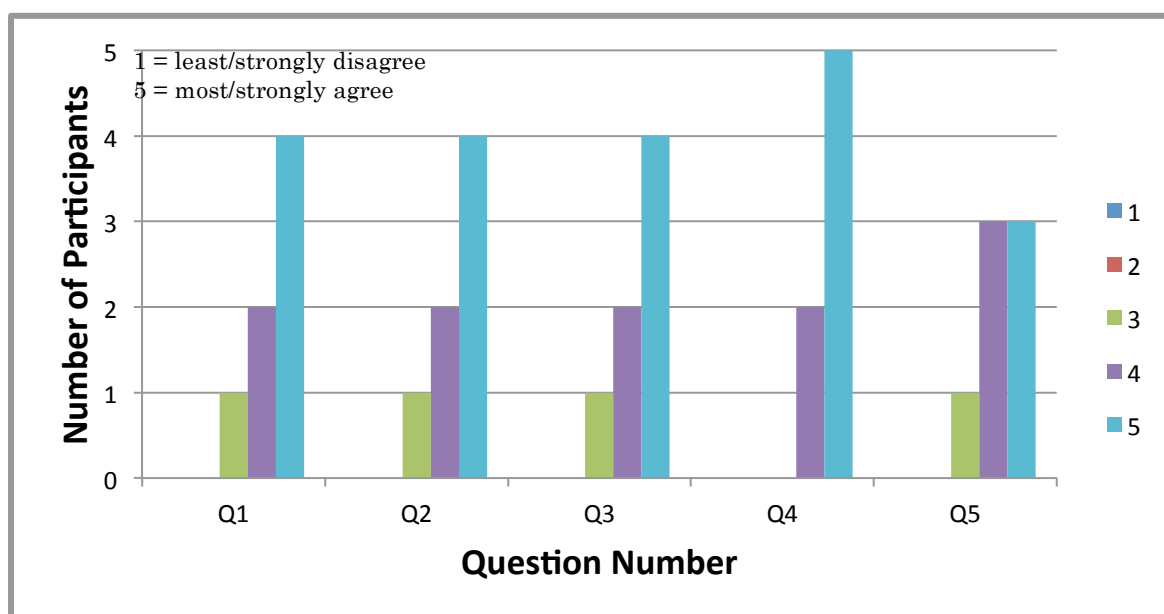


Figure 11: Teachers responses to questions one through five of the follow up interview.

Another section of the survey provided us with information about the timing of the PD. The teachers believed, for the most part, that the fifteen minutes of exploration we gave them was enough time to explore the website before jumping into the tutorial. One participant said, “*I thought this program was designed well and the length of the time allowed to navigate and explore perfect!*” Another teacher said, “*It*

is good to play with the site before learning how to use it, that way we know what is what.” This feedback showed us that teachers liked having exploration of the website before they were provided with a structured tutorial. However, the teachers did vary on how long they suggested the facilitator dedicate to exploring the website. Figure 12 shows the various recommendations from the participants.

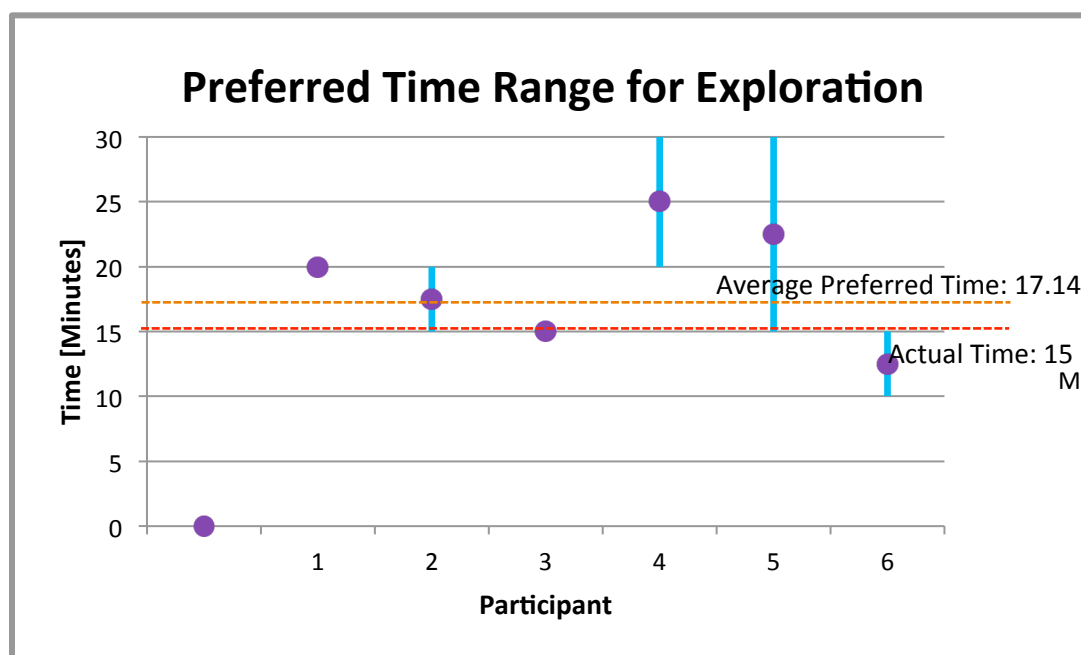


Figure 12: Average of the time ranges that teachers suggested for the first period of free exploration of the website.

Although their opinions on the time for website exploration differed, all seven participants said that the leader of the tutorial walked through it at an acceptable pace. The participants answered more questions about the timing of other portions of the PD in the questionnaire that was given after our PD. You can find these results in Appendix R.

During the focus group, we further discussed the overall timing and different parts of the PD. We found that many of the participants enjoyed being able to “play with” the website on their own before starting the tutorial. They believed that this helped them become acquainted with the website which made it easier to navigate during the tutorial. The teachers agreed that this PD was an appropriate amount of time because all of the necessary information they needed for background and directions were given. They also agreed that the introduction did not drag on, preventing the PD from being longer than it needed to be. One participant commented on the background saying, “*[it] explained history and purpose – long enough, but not too long.*” All focus group responses can be found in Appendix S.

During the focus group, we also discussed a scenario of a non-technically advanced person working the website. The participants discussed the clear navigation of the website. One teacher mentioned that even if someone was not great with computers, the website “*keeps pushing through.*” An example of this is the “next activity” button appearing after an activity is completed. The educators also discussed the clarity of the PDF tutorial being used. They believe that following this tutorial, someone not efficient with computers could complete the given task. One teacher’s opinion about the previous statement referenced the hands on portion of our PD. She said that because they were able to try it during the presentation, it would be easier for her to continue working on this website at home. Overall the teachers agreed that this website, along with the tutorial, would be useful for someone with little knowledge in computer-based technology. One participant stated that “*the navigation of the site was very clear using the PDF and it was great to try things we learned before we left.*”

The focus group participants discussed the integration of the RME website into their classrooms. All teachers in attendance planned on combining the interactive website with their current curriculum. Some of the reasons why these educators wanted to start using the website so quickly were that it had great connections to their current curriculum, and it contains a combination of math, reading, and history information. Some suggestions these teachers had on integrating this website in their curriculum were having the students explore the website in homework activities; using both the website and printed activities to keep the topics going; projecting the biographies and vocabulary words; and having children make posters or PowerPoint presentations about the charterers by searching and playing with the website. For example, one teacher said, “*I would like to mix the website and online curriculum. Students could explore the website at school and then complete printed materials for homework.*” Although it was not a major issue with this group, the participants recognized that this website would be difficult to implement with no computer lab access. They believed that teachers could work through the activities with the students on a projector but it would not have the same outcome if all students could work alone or in small groups. One teacher said “*nice job! Good presentation! Great website! Good info/site that I’ll share with my team!*”

Three weeks after the PD, six out of nine teachers, who returned their reflection, had used the website with their students in some way. The reflection prompt and teacher’s responses can be found in Appendices T and U respectively. Those who have used RME as part of their curriculum reported that the site was easy to use and the PD made the steps of creating a classroom simple to repeat. The educators have integrated the site into their classes in a few different ways. Some are using RME to teach their students about historical figures. They read the biographies and then follow up by completing the activities. Others are focusing more on the math activities. All teachers said that their students loved navigating the site,

and were excited to continue using it. An example of the use of the RME website in the classroom is as follows:

“I modeled the Benjamin Franklin activities with the whole class. Individual students used the Interactive white board to complete the activities in front of their peers. The children were then able to go on the website and do the same thing with George Washington Carver. They enjoyed both the whole group activity and the individual activity.”

Suggestions for Improvement

Feedback from the follow up survey was essential to improving our PD. However, the only suggestion that was given to improve this PD was to ask the participants not to choose Lillian during the exploration time. This was because Lillian is the focus of the PDF and could potentially take away from the tutorial. It could also get boring for the participants, and one teacher said it could even get “*a little repetitive*.” The teachers also provided one recommendation to improve the website. One teacher said that “*the definitions themselves were more complicated than the words they were describing*.”

Comparison of Take Home PD

Two teachers who wanted to take part in our project were not able to attend the PD, so we provided them with background information on the website, the PDF tutorial, and a slightly altered version of the follow up survey (Appendix V). Their responses can be found in Appendix W. After completing the tutorial, both teachers said that they were pretty knowledgeable about the website, and capable of navigating it. They also said that they were provided with enough background information about the website, and would be able to create a classroom again on their own. Both teachers found the PDF easy to follow, and liked that it was step by step.

One teacher planned on using the site in her classroom. The other was unsure because she thought the activities might be too easy for her students. When asked for additional comments, a teacher said “*I really do want to stress that the tutorial was very easy to use and follow*.” The information gathered from these teachers backed up the feedback from the PD participants. These teachers also agreed that a downside to the website is the vocabulary words and their definitions. These results showed that the tutorial was easy to use, and the teachers would be able to navigate the website after following it. Even though both teachers said they understood how to navigate the RME website, we believe that they would have gained a better

understanding if they were at the PD. This is because they could get answers to any questions they had.

Summary

Ultimately, the results from each portion of this project came into play in one way or another. The data from the initial interviews was used to educate us on how often the teachers work with technology as well as their opinion on computer-based technology in the classroom. Taking into account our research and the feedback from the trial, the PD was formatted to be beneficial to teachers. The post PD results, such as the follow up questionnaires, focus group discussions, and reflections proved that our PD was successful. The feedback was also used to solidify the changes that needed to be made to the PD. The opinions received from the two individual participants further proved that the PD was informative.

Conclusion & Recommendations

The purpose of this Interactive Qualifying Project (IQP) was to design a professional development (PD) aimed to provide elementary school teachers with the expertise to implement the Reading and Math Explorers™ (RME) website in their classrooms. To complete this, the project team performed background research regarding learning methods to understand the topic, and met with teachers in order to create the most effective PD. Through this PD, the participants gained the necessary knowledge and skills to successfully utilize the RME website as an alternate resource in their curriculum.

After conducting the PD we administered a survey to gather feedback from the participants. These survey questions asked about general comfort with the website, length of the PD, opinions about the tutorial, and implementation of the RME website. We also held a focus group immediately after the survey. During this focus group, the teachers discussed possible scenarios encountered while using the website and integration of this site into their classrooms. All of the post PD results demonstrated how successful this PD was.

From the survey, we learned that the tutorial is easy to follow and participants felt comfortable navigating the website on their own. The teachers said that each section of the PD was approximately the appropriate amount of time. More positive feedback received from participants was that they liked exploring the website before going through the tutorial. They also noted that we gave enough background prior to exploration of the website, and we demonstrated all aspects of the website. All teachers planned on using the RME website with their students.

Two teachers were not available for the presentation of the PD at Worcester Polytechnic Institute. These participants completed the tutorial and short exercise on their own. After they completed this, they filled out a variation of the survey tailored to their experience. Both teachers expressed that the tutorial was extremely easy to follow and that it made them capable of navigating the website. One teacher planned on using the website in her classroom, the other was not sure due to the educational level of the activities.

While working on our project we encountered some problems. In order to address these issues, we have come up with recommendations for future use of this website and PD. First, we suggest that when working with the website, and further developing the PD, one should become familiar with all aspects of the website and associated errors early on. Originally, we only looked at how the website worked because we did not expect to find errors. Later, while designing the PD, we found many website errors that held up progress of our project. This will help future facilitators to be prepared sooner and save time in the design process.

Next, we recommend that more participants than necessary are recruited. We started off with fourteen teachers interested in the project, which fell in the middle of our goal of eight to twenty participants. Because this number was sufficient, we did not recruit any more teachers. Throughout the stages of our IQP, five teachers dropped from the program for various reasons. This left us with almost the minimum amount of teachers we wanted. Facilitators should recruit more than the desired amount of participants to account for any losses that occur.

After analyzing the results from the post PD survey and focus group we determined we only needed to make one change. The teachers suggested that facilitators ask future participants to not navigate Lillian's chapter in the first free exploration time. They suggested this because the tutorial focuses on Lillian, and the PD could become repetitive. Therefore, we recommend that facilitators direct participants away from using Lillian's page prior to the tutorial.

During our presentation of the PD for the RME website a few teachers discussed the Common Core State Standards. We learned that this is an outline of what teachers are expected to teach. Some teachers recommended that integrating these standards into the website would result in a greater use of RME. We suggest that the website be updated to meet more of the goals of the Common Core State Standards so that RME becomes more widely used.

Our goal was to educate teachers about the RME website. We completed this by holding a PD for grades K-4 teachers. All the teachers provided positive feedback in a follow up survey and focus group. We made some recommendations for future facilities based on this information. Finally, we updated our PD to include the one change the participants suggested. We recommend that facilitators use the full PD, not only the tutorial, to demonstrate the functions of the website. This is because the PD provides information necessary to understand and work the website. It also gives participants time to explore and practice exercises which teachers would not get out of the tutorial on its own.

The final step in making RME fully functional is to address any remaining or additional problems with the website. We recommend that definitions in the glossary are updated after consulting with teachers. We provide a list of errors we found on the website in Appendix X. We also suggest the website be thoroughly checked and the webmaster contacted with remaining problems so nothing is left unattended.

During this project, we learned a lot through research and PD design. In addition, we improved our networking skills through constant contact with the participants. We further developed our writing and organization skills. Our opinion of the PD execution was that teachers learned a lot from a well-structured tutorial. Our overall experience with this IQP was positive.

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Appendices

Appendix A: Project Description

Mission Statement

Created on 11/15/11

The final goal of this project is to design a professional development program aimed to provide elementary school teachers with the expertise to implement the Reading and Math Explorers website in their classrooms. The team will perform background research regarding learning methods to understand the topic, and meet with teachers in order to create the most effective professional development plan. Through this plan, the participants will gain the necessary knowledge and skills to successfully utilize the Reading and Math Explorers website as an alternate resource in their curriculum.

Appendix B: Objective and Problem Statement Exercise

Realizing Project Objectives

Purpose: To operationalize project objectives/research questions

Resources: Domains of knowledge paper, problem statement, project goal, readings

Task

Using the questions below as prompts please write a detailed description of your project's questions or objectives. Then, as a summary, prepare a flow chart that represents the connections explained in your narrative.

1. What information do you need to know to fulfill the objective?
To fulfill the project objectives we need to:
 - know and understand methods of learning,
 - know what is on the website and how it works,
 - understand what the teachers current curriculum includes
 - know why it is important for kids to learn and understand reading and math
 - learn what appropriate learning methods are for different age groups
2. Why do I need to know it? (link it to your domains of knowledge paper)
 - We need to know this information because it will help us figure out the best questions to ask teachers
 - We need to understand the website in order to develop a professional development program
 - We need to know the teachers curriculum to determine how it is relevant to the website
 - We need to know the teaching techniques and what is appropriate for the age group because different age groups learn in different ways
3. What kind of data will answer the question?
 - Becoming better acquainted with the website
 - Data from background research
 - Data from informative meetings with professors
4. Where can this data be found?
 - Online
 - On the Reading and Math Explorer Website
 - Scientific Journals and books
 - From teachers and their personal experiences in a classroom setting

5. How will you access to these data?
- Spend time researching data
 - Set up meetings with teachers
 - Spend time learning about the website
6. What's your time line for gathering the data
- Data collection is an ongoing process in this project
 - Background research will be complete by the end of B term at the latest
 - Teachers meetings will start in C term and continue into D term as the project development requires
7. What methods are most useful for this type of data collection?
- Meetings are a useful method
 - Research is also useful
 - i. If more than one method is useful for this question/objective, which is best and why? Use appropriate references.
 1. Meetings are more useful for data collection
 2. Research, however, is more useful to gather background data

Appendix C: Initial Timeline

IQP Timeline

B Term

Term Goals:

- Research and contact teachers

Week Goals:

- Week 1: Address research questions, come up with objectives, and develop timeline.
- Week 2: Address research questions, create paper outline, gain understanding of website, begin introduction and background sections.
- Week 3: Continue to work on introduction and background sections of the paper, and continue research. Draft teacher questions.
- Week 4: Continue to work on introduction and background sections of the paper, and continue research. Work on teacher questions and email.
- Week 5: Continue to work on background section and introduction for next two weeks. Finalize teacher questions and emails to fill out and submit IRB Form. Start working on the Methodology section.
- Week 6: Continue to work on background section and introduction section of the paper and resubmit. Continue drafting Methodology section of the paper. Continue contacting teachers. Write the methodology for the IRB and submit.
- Week 7: Finalize and submit introduction and background sections. Submit current Methodology section of the paper. Plan out new meeting times and book rooms for C-term.

C Term

Term Goals:

- Meet with teachers and develop the professional development program.
- Beginning of C term: Have first draft of professional development done.

Week Goals:

- Week 1: Contact teachers again to finalize meeting times. Continue work on methodology section of paper. Book rooms for teacher meetings.
- Week 2: Meet with teachers to find information to use in professional development program. Work on methodology section of paper.
- Week 3: Meet with teachers to find information to use in professional development program. Work on methodology section of paper.

- Week 4: Collect data and start development of professional development program. Work on results section of paper. Create questionnaire for final teach interview.
- Week 5: Work on professional development program and results section of the paper. Finalize questionnaire for final teach interview.
- Week 6: Finalizing the professional development program and available sections of the paper.
- Week 7: Submit paper with all available sections. Submit 2nd IRB form for follow up interview.

D Term

Term Goals:

- Meet with teachers to show them the professional development program and get feedback.

Week Goals:

- Week 1: Work on corrections of paper, and finalize meeting times with teachers.
- Week 2: Meet with teachers and demonstrate the professional development program.
- Week 3: Add to finding section of the paper. Work on results and analysis sections of paper.
- Week 4: Receive final feedback from teachers. Add to results and analysis section of the paper, work on executive summary.
- Week 5: Work on conclusion and recommendations sections of paper. Work on abstract.
- Week 6: Submit final draft of paper with all sections, receive feedback, and edit.
- Week 7: Submit final paper with all sections.

Appendix D: Final Timeline

IQP

Timeline

B Term

Term Goals:

- Research and contact teachers

Week Goals:

Week 1: Address research questions, come up with objectives, and develop timeline.

Week 2: Address research questions, create paper outline, gain understanding of website, begin introduction and background sections.

Week 3: Continue to work on introduction and background sections of the paper, and continue research. Draft teacher questions.

Week 4: Continue to work on introduction and background sections of the paper, and continue research. Work on teacher questions and email.

Week 5: Continue to work on background section and introduction for next two weeks. Finalize teacher questions and emails to fill out and SUBMIT IRB Form. Start working on the Methodology section.

Week 6: Continue to work on background section and introduction section of the paper and reSUBMIT. Continue drafting Methodology section of the paper. Continue contacting teachers. Write the methodology for the IRB and SUBMIT.

Week 7: Finalize and SUBMIT introduction and background sections. SUBMIT current Methodology section of the paper. Plan out new meeting times and book rooms for C-term. Schedule appointment with writing center.

C Term

Term Goals:

- Meet with teachers and develop the professional development program.
- Beginning of C term: Have first draft of professional development done.

Week Goals:

Week 1:

- a. Make appointment for writing center.
- b. Contact teachers again to finalize meeting times.
- c. Continue work on methodology section of paper.
- d. Book rooms for teacher meetings.
- e. Update Professional Development and Tutorial.
- f. Update Timeline.

- g. Test session with friends to get time.
- h. Contact teachers about PD in early march (survey monkey).

Week 2:

- a. Work on PD.
- b. Meet with writing center (intro and background). - Wednesday
- c. Meet with teachers. - Weekend
- d. Work on methodology section of paper.
- e. SUBMIT draft methodology section.
- f. Make appointment for writing center (methodology).
- g. Pick date for PD. - Friday
- h. Book rooms for teacher meetings.
- i. Remind teachers about survey on Wednesday
- j. Reminder e-mail about teacher information sheet and access to PDFs.

Week 3:

- a. Update Introduction
- b. Work on PD.
- c. Meet with teacher – Laura Logan
- d. Work on results sections of paper-Create outline.
- e. Create questionnaire for final teacher interview.
- f. Start working on Appendices-Create outline.
- g. Work on methodology section.
- h. Pick date for PD. Monday February 20th
- i. Email date for PD, specify final survey is at the end, also if you have a food preference/allergy email back about it.
- j. Make a list of activities and grade levels to give to teachers
- k. SUBMIT introduction (end of the week)

Week 4:

- a. Meet with writing center (methodology).
- b. Work on Methodology
- c. Work on appendices.
- d. Finalize questionnaire for final teacher interview.
- e. SUBMIT new questions to IRB office.
- f. Create teacher information sheet to hand out at program.
- g. Self-stamped envelopes for teachers to use to return reflection
- h. Email teachers

Week 5:

- a. Work on results section of paper.
- b. SUBMIT first (initial interview with teachers) subsection and all available appendices.
- c. SUBMIT PD and tutorial.
- d. Update background.
- e. Work on appendices.
- f. Work on Methodology.
- g. Collect data and update PD based on the prior interviews.

- h. Draft for PD outline and times - Friday
- Week 6:
- a. Finalizing the professional development program and available sections of the paper.
 - b. Meet with teachers to show them the professional development program.
 - c. Email teachers the PDF and activity list
 - d. Work on background
 - e. Work on methodology
- Week 7:
- a. SUBMIT paper with all available sections including all available appendices.

D Term

Term Goals:

- Feedback about PD.
- Finalize paper.

Week Goals:

Week 1:

- a. Work on corrections of paper
- b. Reminder email about reflection paper

Week 2:

- a. Work on results and sections of paper.
- b. Continue working on background
- c. Continue working on methodology
- d. Work on appendices.
- e. SUBMIT results, background, intro, methodology.
- f. Make writing center appointment (results, background).

Week 3:

- a. Work on conclusion.
- b. Work on recommendations.
- c. Work on appendix.
- d. Update methodology.
- e. Update background.
- f. SUBMIT appendix.
- g. SUBMIT conclusion & recommendations.

Week 4:

- a. Writing center appointment for results & formatting – Wednesday.
- b. Work on conclusion and recommendations.
- c. Update background.
- d. Update Appendix.

- e. Update results – Friday.
- f. Executive summary – Thursday.
- g. Abstract – Thursday.
- h. Start combining sections.

Week 5:

- a. Title Page
- b. Acknowledgement
- c. Authorship
- d. Table of Contents
- e. Bibliography
- f. Make edits to abstract, exec sum, results – Thursday
- g. Make all changes in big document – Thursday
- h. Document multiple teachers logging in to same classroom
- i. SUBMIT final paper with all sections.

Week 6:

- a. Receive feedback.
- b. Finalize paper.
- c. SUBMIT IQP.

Appendix E: Creating a Classroom from Webmaster

- login to your teacher account (I have reset all of your passwords to "password")
- select the "Teacher Resources" tab
- select the "Classroom User Management" tab
 - enter a "classroom user full name"
 - this is the name that will appear where it says "signed in as..."
 - enter a username in the "change username" field
 - this will be the username that you will enter to login as your classroom
 - enter a password in the "change password" field
 - this will be the password you use to login as your classroom
- select "update user"
 - you can now login as your classroom
- select the "Classroom Activity Selection" tab
 - select whichever activities you wish for the given character
 - save your selection
- log out of your teacher account
- log back in as your classroom/student account

Appendix F: Initial Teacher Contact Email

To Whom it May Concern,

We are juniors at Worcester Polytechnic Institute (WPI), and we are writing you today to ask for your participation in our Interactive Qualifying Project. For our project, we are working with our Faculty Advisor, Martha Cyr, to design a professional development program aimed to provide elementary school teachers with knowledge about how to use the Reading and Math Explorers™ website. Professor Cyr has been working with the K-12 Outreach office for over 5 years to develop this supplemental curriculum and interactive learning website that contains a variety of historical figures as children. Students can read the characters' biographies and complete reading and math activities related to each character to enhance their understanding of these subjects. Teachers have the option to choose which activities are appropriate for their class.

We are looking for elementary school teachers to participate and provide feedback on our project. Participants will be required to drive to WPI to become involved in this project. Participation in this plan will include three steps.

1. A short 30 minute initial interview, where questions will be asked regarding the use of learning technologies in the classroom and past experiences with professional development programs.
2. A 1-4 hours pilot session of our professional development program, where participants will learn how to use the website in their classrooms.
3. A second 30 minute interview, where questions will be asked to receive feedback regarding our program.

The initial interview will take place between late January and early February, at your convenience. The professional development plan pilot session will be held in the beginning of April. The final interview will take place later that month. Both interviews and the program will be held at Worcester Polytechnic Institute. All who participate will be compensated with a stipend for time spent outside of normal teaching hours.

We would like all those interested in participating to respond to us at IQP-RME@wpi.edu by December 30, 2011. Please include the following information:

- Full name
- School name and location
- Grade level teaching
- Email address
- Contact phone number

Please feel free to contact us with any questions or concerns you may have regarding this email. We hope to work with you soon.

Appendix G: Table of Teacher Contact Info

Participant Number	School Name	School Location	Grade Level(s)
1	Gates Lane School	Worcester, MA	1st Grade
2	Brophy Elementary School	Framingham, MA	4th Grade
3	Spring Street School	Shrewsbury, MA	2nd Grade
4	Spring Street School	Shrewsbury, MA	1st Grade
5	Woodside Montessori Academy	Millis, MA	4th-6th Grade
6	Prescott/Oldham Elementary Schools	Norwood, MA	K-5 Library
7	Spring Street School	Shrewsbury, MA	4th Grade
8	Elm Street School and Helen Mae Sauter	Gardner, MA	1st-5th Grade
9	Spring Street School	Shrewsbury, MA	4th Grade
10	Spring Street School	Shrewsbury, MA	3rd Grade

Appendix H: Second Email to Teachers

Dear Name,

Thank you for being interested in our project. We have available times for the initial interview from January 17th, until February 3rd. Please see the link at the bottom page for available times. We are asking that you send us your top three time choices for your interview. After we will let you know which one works best (if they all work you will get your first choice). If none of the times available work for you, please e-mail us so that we figure out another time that is best for everyone.

During this meeting we will be asking you about computer-biased technologies in your classroom, and prior professional development programs you have attended. Any information you can provide us with will be greatly appreciated, and will help out a lot during our project.

Here is the hyperlink to the time slots Google Doc:

<https://docs.google.com/spreadsheets/ccc?key=0AgLgu0lVQGr2dGZMaWptZ1plY2JGN3J5bFBSWWFiQUE>

The green time slots are available for interviews and red time slots have already been claimed. When you send us your preferences please only include green time slots.

We cannot wait to work with you!

Hailey DiSpirito, Nikole Dunn, Amanda Piscopiello

Appendix I: Questions for Initial Interview

Teacher Questions

- 1) Do you and your students have access to computers in your school?
☐ Yes
☐ No
- 2) Are there enough computers available for each student to use?
☐ Yes
☐ No
☐ N/A
- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.
☐ Less than 1 week
☐ 1-2 weeks
☐ 2-3 weeks
☐ 3-4 weeks
☐ Greater than 4 weeks
☐ No need to book a lab, computers are always available
☐ N/A
- 4) Is there internet access available for students to use?
☐ Yes
☐ No
- 5) Is there internet access available for teachers to use?
☐ Yes
☐ No
- 6) Do you use technology with your students? Check all that apply.
☐ PowerPoint
☐ Computer Labs
☐ SmartBoards
☐ Computer to Screen projector
☐ Notesheet to Screen projector
☐ Other: _____
☐ No, I don't use technology with my students
- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

- ☐ Yes, please explain
- ☐ No, please explain
- ☐ Not sure

Explanation:

8) Do you think the use of technology in an elementary school curriculum keeps students attention?

- ☐ Yes, please explain
- ☐ No, please explain
- ☐ Not sure

Explanation:

9) Do your students respond positively to the use of technology?

- ☐ Yes, please explain
- ☐ No, please explain
- ☐ Not sure
- ☐ N/A

Explanation:

10) Do your students enjoy when technology is used?

- ☐ Yes, please explain
- ☐ No, please explain
- ☐ Not sure
- ☐ N/A

Explanation:

11) Do your students get distracted or bored when technology is used?

- ☐ Yes
- ☐ No
- ☐ Not sure
- ☐ N/A

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

- b. Who ran the program?
- c. How long did it last?
- d. What topic(s) or skill(s) did this session focus on?
- e. Was it effective? Why or why not?
- f. What teaching techniques did the instructor use? Did you like or dislike their approach?

13) In regards to the most *effective* professional development program that you attended:

- a. When did it take place? How long ago was it?
- b. Who ran the program?
- c. How long did it last?
- d. What topic(s) or skill(s) did this session focus on?
- e. Why was it effective?
- f. What teaching techniques did the instructor use? Did you like or dislike their approach?

14) What is your preferred style of learning? (Choose which one best applies to you under each)

- a. Do you prefer:

- ☐ Seeing information written on a board/screen, using picture and graphs
- ☐ Having the information read or lecture to you
- b. Do you prefer:
 - ☐ Understanding the big overall picture and then learning the parts that make it up
 - ☐ Understanding all the details separately and then piecing them together
- c. Do you prefer:
 - ☐ Working in a group environment
 - ☐ Working by yourself
- d. Do you prefer:
 - ☐ To do example problem and activities to build on the concepts
 - ☐ To read over the material and reflect on the concepts

15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Appendix J: IRB Form and Info



WORCESTER POLYTECHNIC INSTITUTE
Institutional Review Board
Application for Exemption from IRB Review for
Survey or Interview Research Involving Minimal or No Risk

WPI IRB use only
IRB #
Date:

Use of this application is recommended for most student project research involving minimal risk. Proposed research meets the definition of "minimal risk" when the risks to research subjects are not greater than those ordinarily encountered in daily life. This application is specifically intended for projects in which students are expected to conduct interviews, surveys or focus groups. Please return a signed hard or electronic copy of this application to the WPI IRB c/o Ruth McKeogh, 2nd floor Project Center or irb@wpi.edu. If you have any questions, please call (508) 831-6699.

Reset Form

Project Faculty Advisor(s):

Name: Martha Cyr Tel No: 508-831-6709 E-Mail Address: mcyr@wpi.edu
Department: K-12 Outreach
Name: Tel No: E-Mail Address:
Department:

Student Investigator(s):

Name: Hailey DiSpirito Tel No: 401-744-3317 E-Mail Address: haileydispirito@wpi.edu
Name: Nikole Dunn Tel No: 203-515-5521 E-Mail Address: nikole_dunn@wpi.edu
Name: Amanda Piscopiello Tel No: 401-996-7195 E-Mail Address: apisco324@wpi.edu
Name: Tel No: E-Mail Address:

Project Title: Reading and Math Explorers™: Professional Development for Elementary School Teachers

Project Location and Time Frame: Worcester Polytechnic Institute, B-D terms

Expected Research Subjects: (e.g. museum visitors under the age of 12)
Elementary school teachers

NOTE: This application must be accompanied by written research methods and a reasonably complete set of survey or interview questions.

1. Is the proposed research sponsored or supported by a US federal agency or by US government funding? No ☒ Yes ☐
2. Is the proposed research funded by a corporation or foundation? No ☒ Yes ☐
If so, please identify sources.

**WPI IRB Application for Exemption from IRB Review for
Survey or Interview Research Involving Minimal or No Risk**

- | | | |
|--|-------------------------------------|--------------------------------------|
| 3. Does the proposed research involve vulnerable research subjects? (e.g. children, prisoners, students, persons with mental or physical disabilities, pregnant women) | No <input checked="" type="radio"/> | Yes <input type="radio"/> |
| 4. Is the research confined to obtaining verbal or written information from subjects and/or publicly available documentary information? | No <input type="radio"/> | Yes <input checked="" type="radio"/> |
| 5. Could the disclosure of a human subject's identity and responses place the subject at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation? | No <input checked="" type="radio"/> | Yes <input type="radio"/> |
| 6. Will the researchers collect information that can be used to identify the subjects? | No <input type="radio"/> | Yes <input checked="" type="radio"/> |
| 7. If the researchers do know the subjects' identity, will individual responses be kept confidential? (e.g. only summaries of all data will be published) | No <input type="radio"/> | Yes <input checked="" type="radio"/> |
| 8. Will researchers be interviewing people chosen because of their expertise or experience? (See 4, below.) | No <input type="radio"/> | Yes <input checked="" type="radio"/> |

Please Print Form before signing below

By signing below, all participants in this research project are agreeing to follow the following instructions:

1. You agree to inform subjects orally or in writing that:
 - Participation in the research is voluntary.
 - Participants may end their participation at any time.
 - Participants need not answer every question in an interview or survey.
2. If your research is **anonymous**, you also inform subjects that you are not collecting names or any identifying information from them.
3. If your research is **confidential**, you inform subjects that no identifying information will be disclosed with individual responses.
4. If your research subjects are chosen and interviewed for their expertise or experience, you seek and obtain each subject's permission to identify him or her in your report, and obtain each subject's permission to disclose his or her views and statements in your report. The subject must be offered the opportunity to pre-approve the publication of any quoted material. If a subject does not wish to appear in your report, you respect his or her wishes for confidentiality.

Signature of Faculty Advisor



Date



Methodology for IRB Form

Reading and Math Explorers™: Professional Development for Elementary School Teachers

Hailey DiSpirito

Nikole Dunn

Amanda Piscopiello

Updated information is provided at the bottom in bold.

Our advisor, Martha Cyr, is sending out an e-mail (provided at the end of this document) to a list-serve with teachers and others in related fields, providing them with information about our Interactive Qualifying Project and asking for participants. In the e-mail we asked that interested teachers would reply with their full name, their school name and location of it, grade level they teach, their e-mail address, and a contact phone number. We are asking them this information because it is necessary to consider them for participation and to further contact them.

Teachers will be asked to come to WPI for an interview, where we will ask the questions that were previously submitted with the IRB Form. During this interview the teachers will be asked the questions aloud, and we will record their answers on the questionnaire. We are asking these questions to better understand the use of computer-aided technology in their classrooms, past experiences with professional development programs, and their learning styles. From this information we will be able to design the best professional development program to train these teachers on the use and implementation of Reading and Math Explorers™ website and curriculum.

After the initial interview the Professional Development design began. We plan to show our Professional Development to the teachers on February 20, 2012. After our presentation and workshop we ask that the teachers fill out an anonymous survey about their experience with our project. We will also be holding a short focus group after their survey. We are also asking them to write a reflection about the experience of the program. These items will help us get feedback and improve the program.

Appendix K: Responses from Initial Interview

Participant 1

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

No

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

**PowerPoint, Computer Labs, Computer to Screen projector,
Notesheet to Screen projector**

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

They have a great time and try things

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

Kids are growing up with technology- it's the thing in their generation

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

Kindergarteners even have it, they love using the computer. It's a different way of learning

10) Do your students enjoy when technology is used?

Yes

Explanation:

See above.

11) Do your students get distracted or bored when technology is used?

No

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

current

b. Who ran the program?

Gail Coskey-a "coach"

c. How long did it last?

10 weeks

d. What topic(s) or skill(s) did this session focus on?

Teach like a champion

e. Was it effective? Why or why not?

Not answered

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Not answered

14) In regards to the most *effective* professional development program that you attended:

- a. When did it take place? How long ago was it?
(current) Every first Monday of each month
- b. Who ran the program?
There are 2 coaches
- c. How long did it last?
10 weeks
- d. What topic(s) or skill(s) did this session focus on?
Make centers-small groups to reinforce
- e. Why was it effective?
Because we went through the curriculum and it was a hands on experience
- f. What teaching techniques did the instructor use? Did you like or dislike their approach?
websites

15) What is your preferred style of learning? (Choose which one best applies to you under each)

- a. Do you prefer:
Seeing information written on a board/screen, using picture and graphs
- b. Do you prefer:
Understanding the big overall picture and then learning the parts that make it up
- c. Do you prefer:
Working in a group environment
- d. Do you prefer:
To do example problem and activities to build on the concepts

16) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Look up different resources to find ways to teach that skill to the child

Participant 2

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

Yes

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

PowerPoint, Computer Labs, Computer to Screen projector, overheads

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

I use Brainpop, and online program which has 5 minute cartoon clips; kids listen to that more than they do to a teacher. Even using a projector interests kids.

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

In the computer lab, the kids are more engaged when they can work on something at their own individual level.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

See above question.

10) Do your students enjoy when technology is used?

Yes

Explanation:

Usually they do, unless they don't like the technology.

11) Do your students get distracted or bored when technology is used?

No

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

October

b. Who ran the program?

Literacy Specialist

c. How long did it last?

2.5 hours

d. What topic(s) or skill(s) did this session focus on?

How to view and use the new common core ELA standards, because they are set up differently and there are more than before.

e. Was it effective? Why or why not?

Yes, because I did not know how to read them before.

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

a. Projector on to board

b. Lecture

c. Small groups

I liked the techniques used.

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

Summer of 2009

b. Who ran the program?

Singapore Math

- c. How long did it last?

One week

- d. What topic(s) or skill(s) did this session focus on?

Math curriculum

- e. Why was it effective?

It was effective because instead of just lecturing, a lot of the time was given for hands on time.

- f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Lecturing and modeling techniques were used. These methods were appropriate for what she was teaching.

- 14) What is your preferred style of learning? (Choose which one best applies to you under each)

- a. Do you prefer:

Seeing information written on a board/screen, using picture and graphs

- b. Do you prefer:

Understanding the big overall picture and then learning the parts that make it up

- c. Do you prefer:

Working by yourself

- d. Do you prefer:

To do example problem and activities to build on the concepts

- 15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

- **Try to work one on one, and ask other teachers what else to do**

Participant 3

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

No

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

SmartBoards, Computer to Screen projector, Notesheet to Screen projector, iPad

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

They have the technology at home and know how to use it. They like to use it and it engages them.

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

Its easy and fast, they're excited about it and it helps them to do better.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

They're very knowledgeable about it.

10) Do your students enjoy when technology is used?

Yes

Explanation:

They love it.

11) Do your students get distracted or bored when technology is used?

No

Some always will, but it's better to mix it up

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

Easy teacher-August

b. Who ran the program?

Epson company

c. How long did it last?

1 day

d. What topic(s) or skill(s) did this session focus on?

Easy teach, interactive white board

e. Was it effective? Why or why not?

No, it wasn't because it was too much information at too fast of a pace.

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

I liked being able to see the whiteboard and having things to refer to after the program.

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

Last spring

b. Who ran the program?

Learners edge-Colorado State

c. How long did it last?

Semester long class

- d. What topic(s) or skill(s) did this session focus on?

Reading, special ed

- e. Why was it effective?

Its what we actually do and it supports what we do and keeps us up to date

- f. What teaching techniques did the instructor use? Did you like or dislike their approach?

I like having a syllabus

- 14) What is your preferred style of learning? (Choose which one best applies to you under each)

- a. Do you prefer:

Seeing information written on a board/screen, using picture and graphs

- b. Do you prefer:

Understanding the big overall picture and then learning the parts that make it up

- c. Do you prefer:

Working in a group environment

- d. Do you prefer:

To do example problem and activities to build on the concepts

- 15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Reteach with a new technique; try having a class aid teach it because sometimes different people are better at teaching a certain thing

Participant 4

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

No

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

Computer to Screen projector, Notesheet to Screen projector, iPad

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

They are fascinated by it and have technology at home

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

Yes, they're scoring better in math

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

They know how to work with it, and sometimes show us how to use it.

10) Do your students enjoy when technology is used?

Yes

Explanation:

N/A

11) Do your students get distracted or bored when technology is used?

No

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

currently

b. Who ran the program?

Long distance

c. How long did it last?

January-April

d. What topic(s) or skill(s) did this session focus on?

Special Education students

e. Was it effective? Why or why not?

Yes but there was too much information in a short time

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Having a syllabus is good, and the rest depends on the effort you put in

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

Ongoing

b. Who ran the program?

Learners edge-Colorado State

c. How long did it last?

Semester long class

d. What topic(s) or skill(s) did this session focus on?

Reading, special ed, parents, response to intervention

e. Why was it effective?

Relates to what we're doing at school

- f. What teaching techniques did the instructor use? Did you like or dislike their approach?

It's self-paced, there's a syllabus, a rubric, options, and it's flexible

- 14) What is your preferred style of learning? (Choose which one best applies to you under each)

- a. Do you prefer:

Seeing information written on a board/screen, using picture and graphs

- b. Do you prefer:

Understanding all the details separately and then piecing them together

- c. Do you prefer:

Working in a group environment

- d. Do you prefer:

To do example problem and activities to build on the concepts

- 15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Review, try hands on methods, try having a classroom aid teach it

Participant 5

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

No

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

PowerPoint, Computer to Screen projector, Notesheet to Screen projector

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

Helps them absorb information. They can go to the book first and get a foundation and then extend to the internet.

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

Growing up in a world where wireless technology is everywhere.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

See above.

10) Do your students enjoy when technology is used?

Yes

Explanation:

See above

11) Do your students get distracted or bored when technology is used?

Yes, they can get distracted

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

January 21st

b. Who ran the program?

Researcher from Harvard

c. How long did it last?

1 day, 8:30am-3:30pm

d. What topic(s) or skill(s) did this session focus on?

**Conference of schools f Mass Montessorie-Dean College
Observation of students and how to interpret them
Teaching different aspects of water science/earth
science, and history**

e. Was it effective? Why or why not?

**Yes, they picked topics that I knew little or nothing
about so I can learn a new or different approach on
teaching.**

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

**Hands-on approach, they gave presentations and resources,
and examples of how things work in the classroom.
Showed how to observe and be objective and better ways to
approach things without being judgmental. I liked the
hands on aspect.**

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

4-5 years ago

b. Who ran the program?

Chicago Monessourie

c. How long did it last?

Don't remember

d. What topic(s) or skill(s) did this session focus on?

Music with teaching, making books, making cheese

e. Why was it effective?

There was a lot to take away from it

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Full body movement-incorporating music with teaching

Straight from training to the classroom

When instructors are excited about what they're teaching, it's great

14) What is your preferred style of learning? (Choose which one best applies to you under each)

a. Do you prefer:

Seeing information written on a board/screen, using picture and graphs

b. Do you prefer:

Understanding the big overall picture and then learning the parts that make it up

c. Do you prefer:

Working by yourself

d. Do you prefer:

To do example problem and activities to build on the concepts

15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Get creative and adapt to their learning style

Participant 6

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

Yes

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

PowerPoint, Computer Labs, SmartBoards, Computer to Screen projector, Notesheet to Screen projector, laptops, scanner, video cameras, regular cameras

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

It keeps them engaged and gives a lot more options. Textbooks are older. With technology, they can play games and learn things they cant get if they just read a textbook.

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

If you use them too much though, it can get too out of hand and you can lose their attention. It can go overboard.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

N/A

10) Do your students enjoy when technology is used?

Yes

Explanation:

N/A

11) Do your students get distracted or bored when technology is used?

Yes

It depends on what they're doing. Technology helps but doesn't necessarily always keep their interest.

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

October (3 months)

b. Who ran the program?

MassQ

c. How long did it last?

1 day

d. What topic(s) or skill(s) did this session focus on?

iPad, student projects

e. Was it effective? Why or why not?

Yes, because information was presented with stuff used in class. You could talk about what worked and didn't work.

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Laptop or Ipad connected to projector. I liked it.

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

Year and a half ago

- b. Who ran the program?
Various professors (adjunct to a community college)
 - c. How long did it last?
2 weekends per course, attended over a four year period
 - d. What topic(s) or skill(s) did this session focus on?
Speech therapist came to talk
 - e. Why was it effective?
Because it was run by people actually working with students
 - f. What teaching techniques did the instructor use? Did you like or dislike their approach?
Lecture, video equipment, computer with projector, smartboard, someone brought in students to talk. I enjoyed all approaches.
- 14) What is your preferred style of learning? (Choose which one best applies to you under each)
- a. Do you prefer:
Seeing information written on a board/screen, using picture and graphs
 - b. Do you prefer:
Understanding the big overall picture and then learning the parts that make it up
 - c. Do you prefer:
Working in a group environment
 - d. Do you prefer:
To do example problem and activities to build on the concepts
- 15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?
Go through it again; figure out where the student is getting lost. Work one on one with them.

Participant 7

- 1) Do you and your students have access to computers in your school?

Yes (we have two computers in the room, as well as laptop carts)

- 2) Are there enough computers available for each student to use?

No

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

PowerPoint, Computer to Screen projector, Notesheet to Screen projector, interactive whiteboard, iPads

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

The students are more engaged.

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

Yes, it especially helps a lot of the kids with attention difficulties. Using technology in the classroom is the one time you can get to these kids.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

They're excited. They especially love the interactive whiteboard.

10) Do your students enjoy when technology is used?

Yes

Explanation:

See previous question.

11) Do your students get distracted or bored when technology is used?

Yes, there are times when they get distracted if you do the same thing over and over again.

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

2 Weeks ago

b. Who ran the program?

I don't remember

c. How long did it last?

5 hours

d. What topic(s) or skill(s) did this session focus on?

How to enter grades into the Powergrade system, and how to calculate them using spreadsheets and weighting.

e. Was it effective? Why or why not?

Yes, because it kept everything current, and fresh in your mind.

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Teaching techniques included guidance and applying what you learned. I liked this approach.

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

2 Weeks ago

b. Who ran the program?

Don't remember

- c. How long did it last?
5 hours
 - d. What topic(s) or skill(s) did this session focus on?
How to enter grades into the Powergrade system, and how to calculate them using spreadsheets and weighting.
 - e. Why was it effective?
It was effective because I was able to use it right away and applied what I learned.
 - f. What teaching techniques did the instructor use? Did you like or dislike their approach?
Teaching techniques included guidance and applying what you learned. I liked this approach.
- 14) What is your preferred style of learning? (Choose which one best applies to you under each)
- a. Do you prefer:
I prefer a combination of the seeing and hearing information, but mostly seeing the information.
 - b. Do you prefer:
Understanding the big overall picture and then learning the parts that make it up
 - c. Do you prefer:
Working in groups or by myself depends who I'm working with.
 - d. Do you prefer:
To do example problem and activities to build on the concepts
- 15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?
I would approach the problem differently.

Participant 8

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

Yes

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

Computer Labs

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Not sure

Explanation:

It depends on the student

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

Using computers keeps their attention, and the interactive qualities keeps their attention.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

It helps students to feel successful.

10) Do your students enjoy when technology is used?

Not sure

Explanation:

N/A

11) Do your students get distracted or bored when technology is used?

No

12) In regards to the most *recent* professional development program that you attended:

a. When did it take place? How long ago was it?

Literacy lab-currently

b. Who ran the program?

N/A

c. How long did it last?

Takes place during school

d. What topic(s) or skill(s) did this session focus on?

Comprehension-reading

e. Was it effective? Why or why not?

Yes-real literature; Relies on them to bring your own background

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

Module based, conversations. I liked these methods

13) In regards to the most *effective* professional development program that you attended:

a. When did it take place? How long ago was it?

Reading and writing in ESL classroom, 1 year ago

b. Who ran the program?

State mandated

c. How long did it last?

1 week for 8 weeks

d. What topic(s) or skill(s) did this session focus on?

Reading and writing

e. Why was it effective?

Being able to use and debrief right after

f. What teaching techniques did the instructor use? Did you like or dislike their approach?

N/A

14) What is your preferred style of learning? (Choose which one best applies to you under each)

a. Do you prefer:

Seeing information written on a board/screen, using picture and graphs

b. Do you prefer:

Understanding the big overall picture and then learning the parts that make it up

c. Do you prefer:

Working in a group environment

d. Do you prefer:

To do example problem and activities to build on the concepts

15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Walk through with examples and try examples from different angles

Participant 9

- 1) Do you and your students have access to computers in your school?

Yes

- 2) Are there enough computers available for each student to use?

No

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Less than 1 week

- 4) Is there internet access available for students to use?

Yes

- 5) Is there internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

PowerPoint, Computer to Screen projector, Notesheet to Screen projector, iPads

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

The students are used to technology because their lives now revolve around it. They have everything, in reference to technology. It is how they learn now.

- 8) Do you think the use of technology in an elementary school curriculum keeps students' attention?

Yes

Explanation:

Technology helps engage students with attention difficulties. It keeps them entertained. Also many styles of learners can use technology.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

The students love technology and get excited when it is used. It is very novel to them. They see it as playtime not work time.

10) Do your students enjoy when technology is used?

Yes

Explanation:

The students love technology and get excited when it is used. It is very novel to them. They see it as playtime not work time.

11) Do your students get distracted or bored when technology is used?

No

12) In regards to the most *recent* professional development program that you attended:

- a. When did it take place? How long ago was it?
 - a. November**
- b. Who ran the program?
 - a. Mass. Computer using Educators**
- c. How long did it last?
 - a. 1 full day**
- d. What topic(s) or skill(s) did this session focus on?
 - a. All computer-based technology**
 - i. GoogleDocs
 - ii. Project based learning
- e. Was it effective? Why or why not?
 - a. Not really**
 - i. So short
 - ii. Hard to meet needs of everyone
- f. What teaching techniques did the instructor use? Did you like or dislike their approach?
 - a. Handouts**
 - b. PowerPoint's**
 - c. Work time**
 - i. Instruct then practice
 - ii. Very good, really liked

- 13) In regards to the most *effective* professional development program that you attended:
- a. When did it take place? How long ago was it?
 - a. **Ongoing (Assitments)**
 - i. **September to June**
 - ii. **About once a month**
 - b. Who ran the program?
 - a. **Kristina Heffernan**
 - c. How long did it last?
 - a. **Ongoing (Assitments)**
 - i. **September to June**
 - ii. **About once a month**
 - d. What topic(s) or skill(s) did this session focus on?
 - i. **Smart boards**
 - 1. **House to use in classroom**
 - e. Why was it effective?
 - i. **Able to show how you can immediately apply/use it in in classroom**
 - ii. **User friendly**
 - f. What teaching techniques did the instructor use? Did you like or dislike their approach?
 - i. **A lot of collaboration with other 4th grade teachers**
 - ii. **Show parts, try on own**
- 14) What is your preferred style of learning? (Choose which one best applies to you under each)
- a. Do you prefer:
Seeing information written on a board/screen, using picture and graphs
 - b. Do you prefer:
Understanding all the details separately and then piecing them together
 - c. Do you prefer:
Working in a group environment
 - d. Do you prefer:
To do example problem and activities to build on the concepts

15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

One on one attention; Break down and reteach in a different way; Work through it with them

Participant 10

- 1) Do you and your students have access to computers in your school?

No

- 2) Are there enough computers available for each student to use?

Yes

- 3) Please check the appropriate amount of time you need to book the computer lab beforehand.

Computers are always available

- 4) Is there internet access available for students to use?

Yes

- 5) Is there Internet access available for teachers to use?

Yes

- 6) Do you use technology with your students? Check all that apply.

Computer to Screen projector, Document reader, camera, iPad

- 7) Do you think the use of technology in an elementary school curriculum helps students to absorb information?

Yes

Explanation:

Students are so used to having screen in front of them. They are so quick to use this type of technology and love to use it, know how to use it. This is great for students with short attention spans because of immediate gratification.

- 8) Do you think the use of technology in an elementary school curriculum keeps students attention?

Yes

Explanation:

They like any type of technology. For example, students get quiet and pay attention to movies.

- 9) Do your students respond positively to the use of technology?

Yes

Explanation:

Technology at home – extra math, they see it more as a game then homework and are excited to do it when they get home. Students tend to see this homework like a treat. This is also beneficial to teachers because a lot of these resources are free.

10) Do your students enjoy when technology is used?

Yes

Explanation:

Same as above.

11) Do your students get distracted or bored when technology is used?

No

12) In regards to the most *recent* professional development program that you attended:

- a. When did it take place? How long ago was it?
 - a. December – semester long class**
- b. Who ran the program?
 - a. Learners edge – grad credit from Colorado State**
- c. How long did it last?
 - a. 70 hour course**
- d. What topic(s) or skill(s) did this session focus on?
 - a. ADHD – how to identify it and work with kids it effects and their parents.**
- e. Was it effective? Why or why not?
 - a. Yes because I felt like the examples/situations being mentioned I could relate to from past experiences from students. I liked how we discussed possible outcomes so I could later understand what to do to improve how I handled it before.**
- f. What teaching techniques did the instructor use? Did you like or dislike their approach?
 - a. Liked that it was online and could focus on it. Good substitute for real class when you are busy.**

13) In regards to the most *effective* professional development program that you attended:

- a. When did it take place? How long ago was it?
 - a. **2 years ago (excel and ppt)**
- b. Who ran the program?
 - a. **Ana Morion**
- c. How long did it last?
 - a. **10 weeks**
 - b. **4 hours per week**
- d. What topic(s) or skill(s) did this session focus on?
 - a. **Excel**
 - b. **Powerpoint**
- e. Why was it effective?
 - a. **Got to use own laptop so you had everything when you left so you could look back and continue**
- f. What teaching techniques did the instructor use? Did you like or dislike their approach?
 - a. **Hands on and interactive – really liked**

14) What is your preferred style of learning? (Choose which one best applies to you under each)

- a. Do you prefer:
Having the information read or lectured to you
- b. Do you prefer:
Understanding the big overall picture and then learning the parts that make it up
- c. Do you prefer:
Working in a group environment
- d. Do you prefer:
Read over the material and reflect on the concept

15) How do you help a student when you feel you have covered everything regarding a topic and he or she still does not understand?

Different instructions; Different angle; Bring in another student, sometimes they explain it better because they use their own “language”

Appendix L: PD Scripted Outline

PD Script

1. Introduce ourselves and our project
 - a. 10 minutes
 - b. Introduction of project members
 - i. *Hi, I'm Hailey DiSpirito and I am majoring in BME and ECE.*
 - ii. *Hi, I'm Nikole Dunn and I am majoring in ME.*
 - iii. *Hi, I'm Amanda Piscopiello and I am majoring in RBE and ECE.*
 - c. Introduction of teachers
 - i. *We'd like you to go around room and introduce yourselves. Please mention your name, the school you teach at, and what grades or specialties you teach.*
 - d. Explain project:
 - i. *During our junior year at WPI, we are required to complete an Interactive Qualifying Project, also known as an IQP, outside of our majors. An IQP is designed to develop teamwork skills. In general, IQPs require students to do research, develop an understanding for a need, and execute a project. For our project we have created a professional development for the Reading and Math Explorers™ website. This plan will educate teachers how to implement the website in their classrooms. Our project is important because of the growing use of computer-based technology in curriculums. Teachers need to be taught how to effectively use these tools so their students can benefit the most from it. We have learned that computer-based technology is a successful method of engaging students.*
2. Tell teachers they will be asked to take a short survey and participate in a focus group at the end of the program and that these will provide feedback on our program
 - a. 1 minute
 - i. *At the end of this professional development we will be asking you to complete a short survey as well as participate in a focus group. These will provide us with the necessary information to improve our plan.*
3. Introduce the website briefly
 - a. 5 minutes
 - i. Start writing URL on the board.
 - ii. *Reading and Math Explorers™ started as an 8 volume written curriculum. From a previous IQP the written*

curriculum was changed into an interactive children's website. The website has 8 historical characters depicted as children so the students can relate to them. Each character has a biography and a variety of reading and math activities for grades K-4. Before we give you time to explore the website, does anyone have any questions?

4. Allow teachers time to explore the website
 - a. 16 minutes
 - i. *Please turn to your computers and open a web browser from the desktop. Now enter in rmexplorers.org into the address bar. You can see this URL on the board. We will now be giving you 15 minutes to explore the website on your own. After this we will reconvene to complete a structured tutorial together. If you have problems finding the website, please let us know.*
5. Open tutorial/Split Screen
 - a. 3 minutes (Hailey)
 - i. *I will be walking you through the tutorial provided in the PDF. On your desktop you should see an icon titled "PD Tutorial" please double click this so it opens. Make sure both windows are not minimized. Right click on the task bar and click on "show windows side by side." This should show a window on the left and on the right. Turn to your neighbor and make sure you both have this done correctly.*
6. Go through tutorial
 - a. 45 minutes
 - b. Answer any questions
 - c. Create classroom:
 - i. Remember to mention early learners (younger children) and how it is different from the default
7. Ask teachers to set up a new classroom
 - a. Choose the following three activities for Ellen Ochoa:
 - i. Best Standard Measure
 - ii. International Space Station
 - iii. Biography Questions – Advanced
 - iv. *Now that you have an understanding on how to use the website we'd like you to do an exercise on your own. We'd like you to create a classroom Class2_XX shown on the board. Again these XXs stand for your initials. Once you create the classroom we want you to choose the three activities also shown on the board. If you have any questions feel free to turn to your neighbor or*

ask any of us. Does anyone have any questions on this exercise?

8. Allow teachers additional time to explore the website and ask questions
 - a. 15 minutes (Nikole)

- i. *Now that you have all completed the exercise we will be giving you an additional 15 minutes to explore the website. Feel free to ask us or your neighbor any questions you have during this period. After this we will be having a recap, a survey, and a focus group on what was done today.*

9. Recap what happened in the program

- a. Today you learned how to:

- i. *After today you should have become more familiar with the website. Hopefully you have an understanding on how to navigate the website, create a classroom, and make specific activities available for those classrooms.*

10. Survey

- i. *We will now be distributing a survey about your experience today. We ask that you be honest because this feedback will allow us to improve this professional development. If you have any questions about the survey feel free to ask us.*

1. Give Survey – 15 minutes

11. Focus Group

- i. *The final part of our program tonight is a short focus group. It is really important for us to know what you think. Please be honest because this information will be confidential and used for the improvement of the professional development. For this focus group we will be recording responses so we do not miss any key concepts. By being here you are consenting to this; however, if you are not comfortable with this please do not participate but remain in the room.*

1. Ask questions – give space and time between each – 20 minutes

12. Conclusion – Explain Reflection

- i. *Thank you for coming today, we really appreciate your participation. We are asking one last thing from you. In about two weeks we will be mailing you a prompt for a short reflection with a pre-addressed envelope. Once you have mailed your reflection we will process your stipend. Does anyone have any final questions or comments for us? Thank you again for participating in our project.*

Reading and Math Explorers™

[Sign In](#)



<http://rmexplorers.org/>

Tutorial Designed and Presented by: Hailey DiSpirito, Nikole Dunn, & Amanda Piscopiello

1. Click the “**Sign In**” link at the top center of the page.

Reading and Math Explorers™

[Sign In](#)



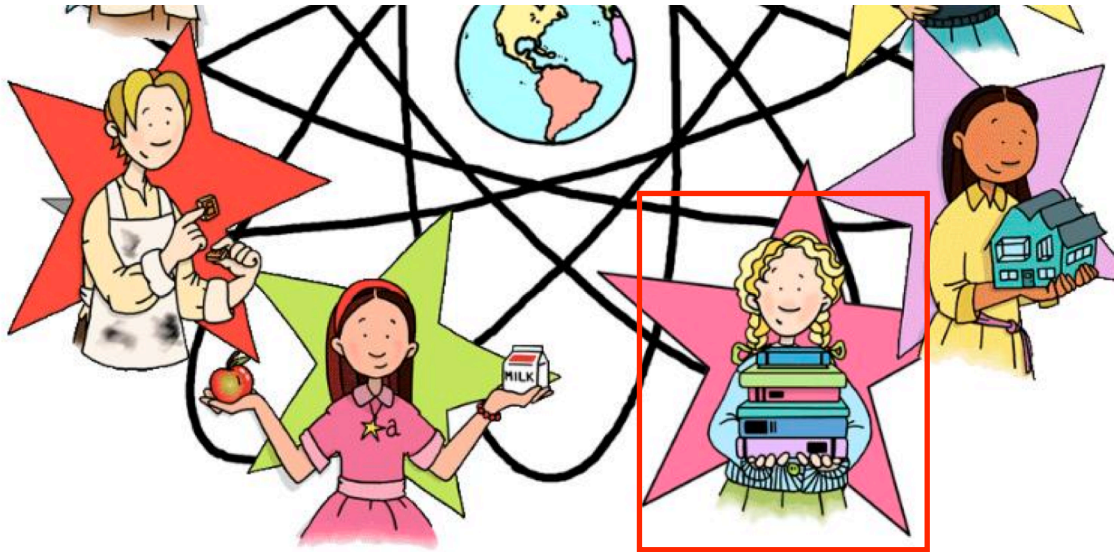
2. Enter username and password into the respective boxes, and click the sign in button to the right of these boxes.

Reading and Math Explorers™

username	password	sign in
----------	----------	---------



3. Click on the character **Lillian Gilbreth**.



*When you first click the character, it will open to a biography.



Signed in as *Nikole Dunn*. [Sign Out](#)

Lillian Gilbreth

Home Lillian's Biography Activities Glossary Teacher Resources About RME



Young Lillian

Lillian grew up in a large [family](#) and often was responsible for taking care of the household. Born in [California](#) in 1878, Lillian was the oldest of nine [children](#). She learned to take care of her brothers and sisters and [helped](#) her parents. School was very important to Lillian. She loved reading and [music](#) and always dreamed about going to [college](#).

Education

Lillian's father did not believe that women should go to [college](#), but Lillian convinced him that she should. She attended the [University of California](#) and received a master's degree in [literature](#).

The Busy Years

[After college](#), Lillian met and later married Frank Gilbreth. Frank was very interested in studying how people and [work could](#) be better organized. He and Lillian started a [business](#) together working on these ideas. Frank never went to [college](#), but Lillian continued with her [education](#). She studied [psychology](#) at Brown [University](#) and earned her [doctorate](#). Besides being so busy with her [education](#) and [career](#), Lillian

4. **Hover** over any of the hyperlinked words (blue and underlined) for a definition of the term.

Lillian grew up in a large [family](#) and often was responsible for taking care of the household. Born in [California](#) in 1878, Lillian was responsible for the care of her brothers and sisters and [helped](#) her parents with reading and [music](#) and

a group of people who often are related
and/or live together

*To play a biography you can click on the listen button. We will play it on the main display for you.



5. Click on the “**Activities**” link, the third link from the left on the colored bar on the top.

Signed in as *Nikole Dunn*. [Sign Out](#)



*The page you arrive at shows a list of all the available activities for this character.

Signed in as *Nikole Dunn*. [Sign Out](#)



Math Activities

- [In-Out Machine: Multiplication](#)
- [Lillian's Hundred Squares](#)
- [Too Many Mittens](#)
- [Too Many Socks](#)

Reading Activities

- [Biography Questions](#)
- [Create New Words](#)
- [Final Sounds](#)
- [Sequencing](#)
- [Sort It](#)
- [Vocabulary Sentences](#)



6. Click on the “Glossary” link, the fourth link from the left on the colored bar on top.



* The page you arrive at shows the definitions of the **hyperlinked** words from the biography page.



Lillian's Glossary

- 🔊 accomplish to finish or complete something
- 🔊 after following something else
- 🔊 alternate to go back and forth between two or more different things, place, or actions
- 🔊 artistic having exceptional abilities in the realm of drawing, sculpting, etc.
- 🔊 backwards with the back coming first; in reverse order
- 🔊 bottom the lowest part of something
- 🔊 budget a guideline for spending money
- 🔊 business an organization that makes products or offers services in exchange for money

7. Click on the “**Teacher Resources**” link, the fifth link from the left on the colored bar on top.

Signed in as *Nikole Dunn*. [Sign Out](#)



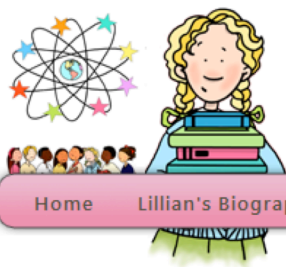
* The page you arrive at shows menus that allow you to customize this website for your classrooms.

Signed in as *Nikole Dunn*. [Sign Out](#)



Lillian Gilbreth's Curriculum
Recommended Reading Resources
Photographs of Lillian
Classroom User Management
Classroom Activity Selection

8. Click on the “**About RME**” link, the last link on the colored bar on top.



Signed in as *Nikole Dunn*. [Sign Out](#)

Lillian Gilbreth

[Home](#)

[Lillian's Biography](#)

[Activities](#)

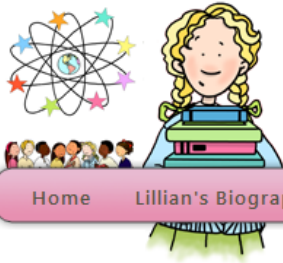
[Glossary](#)

[Teacher Resources](#)

[About RME](#)

* The page you arrive at is an informational page about the website and curriculum.

Signed in as *Nikole Dunn*. [Sign Out](#)



Lillian Gilbreth

[Home](#)

[Lillian's Biography](#)

[Activities](#)

[Glossary](#)

[Teacher Resources](#)

[About RME](#)

About Reading and Math Explorers™

Reading & Math Explorers is a fun and innovative K-4 program that includes eight curricular units and is designed to serve as a supplement to an instructor's current curriculum. The program units focus on the inspirational achievements and interests of a diverse set of historical and contemporary figures. These leaders and innovators are depicted as children, empowering students to recognize in themselves the potential for achievement.

Each unit includes a biography and accompanying language arts and mathematics activities that can be inserted into an existing K-4 curriculum at the instructor's discretion. The activities presented can follow any order, though it is highly recommended that each unit be started with the character biography. For each activity, grade level recommendations are provided.

The context of this unit is Lillian Gilbreth's life and achievements as an engineer and the mathematics focus is on algebra (patterns and functions). If you and your students enjoy this unit

9. Click on the “**Teacher Resources**” link, the fifth link from the left on the colored bar.



Signed in as *Nikole Dunn*. [Sign Out](#)

Lillian Gilbreth

Home

Lillian's Biography

Activities

Glossary

Teacher Resources

About RME

10. Click on “Classroom User Management” tab, the second black button from the top.



Signed in as *Nikole Dunn*. [Sign Out](#)

Lillian Gilbreth

HomeLillian's BiographyActivitiesGlossaryTeacher ResourcesAbout RME

Lillian Gilbreth's Curriculum

Recommended Reading Resources

Photographs of Lillian

Classroom User Management

Classroom User Full Name:

Change Username:

Change Password: (leave empty to ignore)

Early Learner? ☐

Classroom Activity Selection

11. Create a new classroom name for a specific class by typing it into the “**Classroom User Full Name**” Field. For the purpose of this tutorial name your class “**Class1_XX**”. XX will be your first and last initials. This is the name that will appear where it says “**Signed in as**” at the top right hand corner of the screen.

Classroom User Management

Classroom User Full Name: Class1_ND

Change Username:

Change Password: (leave empty to ignore)

Early Learner? ☐

Update User

12. Create a new username for this class by typing it into the “**Change Username**” field. Use the same name as you used in step 18. This will be the username that you will enter to login as your classroom.

Classroom User Management

Classroom User Full Name:

Change Username:

Change Password: (leave empty to ignore)

Early Learner? ☐

13. Create a new password for this class by typing it into the “**Change Password**” field. This will be the password you use to login as your classroom. For the purpose of this tutorial, use “**password**” as your password. You can leave this section blank if you would like to be able to sign into this class without a password.

Classroom User Management

Classroom User Full Name:

Change Username:

Change Password: (leave empty to ignore)

Early Learner? ☐

14. Click the “Update User” button. It is now possible for you to login as your classroom.

Classroom User Management

Classroom User Full Name:

Change Username:

Change Password: (leave empty to ignore)

Early Learner? ☐

15. Click on the “Classroom Activity Selection” tab.

Lillian Gilbreth's Curriculum
Recommended Reading Resources
Photographs of Lillian
Classroom User Management
Classroom Activity Selection

Select any of the activities below to disallow your classroom user from seeing any unchecked activities. If all activities are unchecked (or all are checked), all activities will be available to your classroom user.

16. Check the activities you would like to use for your classroom.

a. For this tutorial check “**Biography Questions**”, “**Create New Words**”, and “**Too Many Mittens**”.

- ☒ [Biography Questions](#) pages 1-5
As an introduction to future lessons on Lillian, students will learn about Lillian's life and achievements. Students will demonstrate comprehension of information presented in a biography.
- ☒ [Create New Words](#) pages 29-30
Students will create new words from the letters in Lillian's name or occupation.
- ☐ [Final Sounds](#)
Students will be able to identify end word sounds
- ☐ [In-Out Machine: Multiplication](#) pages 73-74,76-77
Given an IN number and a function, students will be able to determine the OUT number
- ☐ [Lillian's Hundred Squares](#) pages 58-59
Students will become familiar with a hundred chart and recognize the patterns shown in the columns.
- ☐ [Sequencing](#) pages 8-11
Students will be able to sequence important events in the life of Lillian Gilbreth.
- ☐ [Sort It](#) pages 23-25
Students will be able to match words to the correct word families and use words to complete sentences.
- ☐ [Too Many Socks](#) pages 63-66
Students will explore relationships between numbers and sets. They also will recognize, describe, and extend patterns.
- ☒ [Too Many Mittens](#) pages 63,67
Students will explore relationships between numbers and sets. They also will recognize, describe, and extend patterns.
- ☐ [Vocabulary Sentences](#) pages 39,42
Students will demonstrate understanding of selected vocabulary words.

Save Selections

17. Click the “**Save Selections**” button. It will now process the activities you selected for a specific class.

- ☒ [Too Many Mittens](#) pages 63,67
Students will explore relationships between numbers and sets. They also will recognize, describe, and extend patterns.
- ☐ [Vocabulary Sentences](#) pages 39,42
Students will demonstrate understanding of selected vocabulary words.

Save Selections

18. Sign out from your teacher account.



Signed in as *Nikole Dunn*. [Sign Out](#)

Lillian Gilbreth

Home

Lillian's Biography



Activities

Glossary

Teacher Resources

About RME


19. Sign back in with the classroom account you created in steps 18-20.



[Sign In](#)

Lillian Gilbreth

[Home](#) [Lillian's Biography](#) [Activities](#) [Glossary](#) [About RME](#)



[sign in](#)



Lillian Gilbreth



[sign in](#)

Lillian Gilbreth

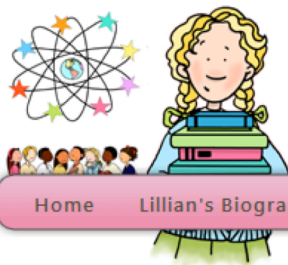
[Signed in as Class1_ND. Sign Out](#)



Lillian Gilbreth

20. Click the “**Activities**” link on the colored bar. Now you will only see the three activities that were selected.

Signed in as *Class1_ND*. [Sign Out](#)



Lillian Gilbreth

[Home](#)

[Lillian's Biography](#)

[Activities](#)

[Glossary](#)

[About RME](#)

Math Activities

- [Too Many Mittens](#)

Reading Activities

- [Biography Questions](#)
- [Create New Words](#)



21. Click the “Too Many Mittens” activity link.

Signed in as *Class1_ND*. [Sign Out](#)

Lillian Gilbreth


Home Lillian's Biography Activities Glossary About RME

Math Activities

- [Too Many Mittens](#)

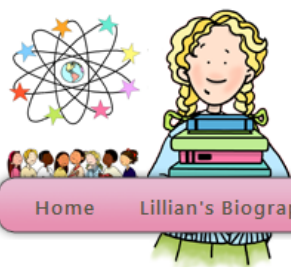
Reading Activities

- [Biography Questions](#)
- [Create New Words](#)



- a. Read the given information at the beginning of the activity.

Signed in as *Class1_ND*. [Sign Out](#)



Lillian Gilbreth

[Home](#) [Lillian's Biography](#) [Activities](#) [Glossary](#) [About RME](#)

Too Many Mittens




On snowy days, Lillian and her eight brothers and sisters liked to play outside. One day, the children came in and left a pile of coats, boots, socks, and mittens all over the floor!


Lillian's mother told them to hang up their coats and line up their boots. She also asked them to wash their socks and mittens in the sink and hang them up to dry on the clothesline.


The children only had one pair of socks each and one pair of mittens each.

- b. For each question type in the correct number.

 Type in the number that correctly answers the question.



 How many children were playing outside if there were 14 mittens to be washed?

 How many children were playing outside if there were 6, 10, or 18 mittens?

6 mittens = children

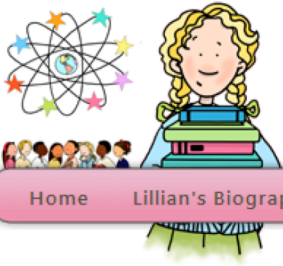
10 mittens = children

18 mittens = children

 How many fingers were kept warm by 14 mittens?

c. When completed a good job message will appear as well as a link to “**Next Activity**”.

Signed in as *Class1_ND*. [Sign Out](#)



Lillian Gilbreth

Home

Lillian's Biography

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Next Activity:
[Biography Questions](#)

Too Many Mittens



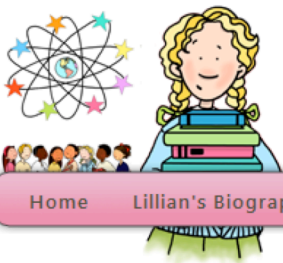
On snowy days, Lillian and her eight brothers and sisters liked to play outside. One day, the children came in and left a pile of coats, boots, socks, and mittens all over the floor!

Lillian's mother told them to hang up their coats and line up their boots. She also asked them to wash their socks and mittens in the sink and hang them up to dry on the clothesline.

The children only had one pair of socks each and one pair of mittens each.

Good Job!

Signed in as *Class1_ND*. [Sign Out](#)



Lillian Gilbreth

Home

Lillian's Biography

Activities

Glossary

About RME

Next Activity:
[Biography Questions](#)

Too Many Mittens




On snowy days, Lillian and her eight brothers and sisters liked to play outside. One day, the

22. Click the “**Biography Questions**” activity link.

- a. To select your answer click on the picture that best describes the statement.
- b. When the correct answer is selected it will be outlined in green, and when the wrong answer is selected it will be outlined in red.

Biography Questions


1.  Click on the picture that shows someone doing a chore.

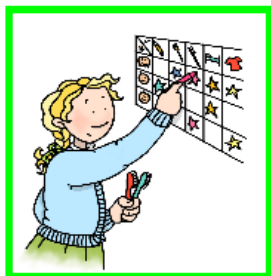


2.  Click on the picture that shows how Lillian's family kept track of things they did at home.



- c. Students can guess again but the red line will stay visible so that you can see where they are making mistakes.

2.  Click on the picture that shows how Lillian's family kept track of things they did at home.



- d. When completed a good job message will appear as well as a link to “**Next Activity**”.

Previous Activity:
[Too Many Mittens](#)

Next Activity:
[Create New Words](#)

Biography Questions

Good Job!


23. Click on “**Create New Words**” activity link.

Previous Activity:
[Too Many Mittens](#)

Next Activity:
[Create New Words](#)


24. Enter the number of letters in “LILLIAN GILBRETH” in the top typing box. a. It will highlight green when answer is correct.

Create New Words

 Type the number of letters in Lillian's first and last name.

L I L L I A N G I L B R E T H

Number of letters: **15**

 The letters in Lillian Gilbreth's name can be mixed up to make many new words. Type twelve of the words that can be made from the letters in her name.

new words:

correct words	incorrect words
<div></div>	<div></div>

25. Now enter words in the “new words” typing box.

a. Try using the words:

- i. airline
- ii. angle
- iii. ball
- iv. train

b. Now try typing in:

- i. brite

c. Since this word is spelled wrong, it appears in the “incorrect words” column.



The letters in Lillian Gilbreth's name can be mixed up to make many new words. Type twelve of the words that can be made from the letters in her name.

new words:

correct words

- 1. airline
- 2. angle
- 3. ball
- 4. train

incorrect words

- 1. brite

d. To finish this activity enter the words:

- i. brain
- ii. giant
- iii. nail
- iv. light
- v. tiger
- vi. thing
- vii. large
- viii. heat

correct words

- 1. airline
- 2. angle
- 3. ball
- 4. train
- 5. brain
- 6. giant
- 7. nail
- 8. light
- 9. tiger
- 10. thing
- 11. large
- 12. heat

incorrect words

- 1. brite

26. “Good Job” will now appear as well as a link to the “**Next Activity**”

Previous Activity:
[Biography Questions](#)

Next Activity:
[Create New Words](#)

Create New Words

Good Job!

Appendix N: Post PD Questionnaire

Name (Optional): _____

Grade Level (Optional): _____ Number of years teaching:

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?					
3. How capable do you feel about navigating the website after this professional development?					
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?					
5. How comfortable would you be training another teacher on how to use the website?					

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?
- 1 (easy)
 - 2

- 3
- 4
- 5 (difficult)

7. What did you like about the PDF document?

What didn't you like about the PDF document?

8. Were you hoping to learn something else about the website that you did not find in the PDF document?
- Yes
 - No

Please explain:

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?
- Yes
 - No

Please explain why or why not:

10. Select an answer in regard to the length of the introduction.
- Too short
 - Correct amount of time
 - Too long
11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?
- Yes
 - No
12. How much time do you think would be appropriate for website exploration?
13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?
- Yes
 - Too short
 - Too long
14. Select an answer in regard to the length of the conclusion.
- Too short
 - Correct amount of time
 - Too long
15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)
16. Do you feel that you can create and customize a classroom again on your own?

Implementation

17. Do you plan to use this website in your classroom?

- ☐ Yes
- ☐ No

Please elaborate on why or why not.

If yes, please elaborate on how you plan to include this in your curriculum:

18. Any additional comments or thoughts about the entire experience?

Appendix O: Questions for Focus Group

Focus Group

1. If you consider yourself comfortable with computers and websites, think about the program from a different point of view: someone who is not tech-savvy.
 - Do you think they would be comfortable using this website?
 - Do you think they would have learned enough about this website to use it effectively?
2. By a show of hands, how many of you plan on integrating this tool in your classroom? _____
 - Why?
 - Why not?
 - What are some ways to overcome the reasons raised by the previous question (the reasons for not using the website)?
 - Please share some ways you plan on using this in your classroom?

3. Overall timing and areas covered during the professional development. In order to make this the best experience for other teachers, what would you recommend to be modified? (time spent on each part, sequence of parts, other)

What do you see as the advantages of the website?

What are the downsides? (if wasn't answered in Q2)

Appendix P: Agenda for Professional Development

Tonight's Agenda

7:00-7:20	Introduction & background
7:20-7:35	Free exploration of the website
7:35-8:25	Tutorial of the website & exercise
8:25-8:40	Additional exploration of the website
8:40-8:55	Recap & survey
8:55-9:20	Focus group & conclusion

Appendix Q: Stipend Form

Stipend Form

First Name: _____ Last Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Social Security Number: _____

Telephone Number: _____ () _____

Email Address: _____

School Name: _____

Appendix R: Responses from Post PD Questionnaire

Participant 1

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?				✓	
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?				✓	
3. How capable do you feel about navigating the website after this professional development?				✓	
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?					✓
5. How comfortable would you be training another teacher on how to use the website?				✓	

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- ☒ 1 (easy)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 (difficult)

7. What did you like about the PDF document?

It was clear and easily understood

What didn't you like about the PDF document?

Nothing

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

- ☐ Yes
- ☒ No

Please explain:

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

- ☒ Yes
- ☐ No

Please explain why or why not:

I felt very familiar with the characters and what to expect.

10. Select an answer in regard to the length of the introduction.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?

- ☒ Yes
- ☐ No

12. How much time do you think would be appropriate for website exploration?

20 minutes

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

Straight forward and easy to follow
and understand. Very clear

16. Do you feel that you can create and customize a classroom again on your own?

Yes

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes
- ☐ No

Please elaborate on why or why not.

Yes I plan to use the one that
has sound. My children are ^{still} early readers

If yes, please elaborate on how you plan to include this in your curriculum:

18. Any additional comments or thoughts about the entire experience?

I thought the concept of combining biographies
of historical figures of Math + Reading was such
a smart way to integrate curriculum subjects.

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

Participant 2

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					✓
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?					✓
3. How capable do you feel about navigating the website after this professional development?				✓	
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?				✓	
5. How comfortable would you be training another teacher on how to use the website?				✓	

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- ☒ 1 (easy)
☐ 2
☐ 3
☐ 4
☐ 5 (difficult)

7. What did you like about the PDF document?

It was extremely step-by-step

What didn't you like about the PDF document?

Nothing

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

- ☐ Yes
- ☒ No

Please explain:

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

- ☒ Yes
- ☐ No

Please explain why or why not:

10. Select an answer in regard to the length of the introduction.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?

- ☒ Yes
- ☐ No

12. How much time do you think would be appropriate for website exploration?

15-20 minutes

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

I was surprised at how easy it was.

16. Do you feel that you can create and customize a classroom again on your own?

yes

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes
- ☐ No

Please elaborate on why or why not.

I like that you can "play" the biography. This is great for my struggling readers. The sequencing section is great for English Language Learners.

If yes, please elaborate on how you plan to include this in your curriculum:

-I can have a center in my classroom where children can listen and read.
-Also, the computer lab

18. Any additional comments or thoughts about the entire experience?

I am concerned about the glossary. I felt that ^{some of} the definitions were harder than the words. Also, for the "final sounds" sections → some of the problems were not the final sound, but the final letter. Example in Ben Franklin: puzzle

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

Participant 3

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?				✓	
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?					✓
3. How capable do you feel about navigating the website after this professional development?					✓
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?					✓
5. How comfortable would you be training another teacher on how to use the website?					✓

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- ☒ 1 (easy)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 (difficult)

7. What did you like about the PDF document?

The step by step instructions made it easy to follow and navigate.

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

What didn't you like about the PDF document?

Nothing

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

- ☐ Yes
- ☒ No

Please explain:

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

- ☒ Yes
- ☐ No

Please explain why or why not:

10. Select an answer in regard to the length of the introduction.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?

- ☒ Yes
- ☐ No

12. How much time do you think would be appropriate for website exploration?

I thought this program was designed well and the length of time allowed to navigate and explore perfect!

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

I found it very easy and straight forward.

16. Do you feel that you can create and customize a classroom again on your own?

Yes, I believe I can (and I will!)

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes
- ☐ No

Please elaborate on why or why not.

We do a unit on biographies and plan on using several of these famous people!

If yes, please elaborate on how you plan to include this in your curriculum:

Children will be instructed on how to use the site and the activities included that I pre-select.

18. Any additional comments or thoughts about the entire experience?

Great job! I have a lot more knowledge on how to create my own classroom experience.

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

Thank you!

Participant 4

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?			✓		
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?			✓		
3. How capable do you feel about navigating the website after this professional development?			✓		
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?				✓	
5. How comfortable would you be training another teacher on how to use the website?			✓		

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- ☒ 1 (easy)
☐ 2
☐ 3
☐ 4
☐ 5 (difficult)

7. What did you like about the PDF document?

easy to read
 examples
 step by step instruction

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

What didn't you like about the PDF document?

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

- ☐ Yes
- ☒ No

Please explain:

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

- ☒ Yes
- ☐ No

Please explain why or why not:

explained history and purpose - long enough, but not too long

10. Select an answer in regard to the length of the introduction.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?

- ☒ Yes
- ☐ No

12. How much time do you think would be appropriate for website exploration?

20-30 minutes

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

straightforward - helpful to have people available if you needed help/had ?'s

16. Do you feel that you can create and customize a classroom again on your own?

Yes

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes
- ☐ No

Please elaborate on why or why not.

like the activities
it incorporates a variety of skills and subjects
fun and educational

If yes, please elaborate on how you plan to include this in your curriculum:

will put up on lrg screen to model, then set
up a customized classroom. this will be a
center during arrival, reading, or dismissal

18. Any additional comments or thoughts about the entire experience?

nice job! Good presentation! Great website! Good
info/site that I'll share w/ my team!

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

Participant 5

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					✓
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?					✓
3. How capable do you feel about navigating the website after this professional development?					✓
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?					✓
5. How comfortable would you be training another teacher on how to use the website?					✓

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- 1 (easy)
- 2
- 3
- 4
- 5 (difficult)

7. What did you like about the PDF document?

Clear, easy to read + navigate. Sequential. ☺

What didn't you like about the PDF document?

The PDF seems fine. If I notice any fine-tuning points, I'll send them to you.

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

- ☐ Yes
- ☒ No

Please explain:

The PDF seems to clearly explain the process of setting things up.

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

- ☒ Yes
- ☐ No

Please explain why or why not:

You provided a sufficient overview of the program & its goals before we got started.

10. Select an answer in regard to the length of the introduction.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?

- ☒ Yes - I'm glad I picked someone other than Lillian, just for variety!
- ☐ No

12. How much time do you think would be appropriate for website exploration?

Depending on whether I wanted to skim or drill down - 15-30+ minutes.

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

Easy. And you answered my question about individual user vs. class.

16. Do you feel that you can create and customize a classroom again on your own?

Yes.

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes *- we'd love to try it out!*
- ☐ No

Please elaborate on why or why not.

We're focusing on inventors + inventions right now, so this site + its focus fits right in with what we're doing!

If yes, please elaborate on how you plan to include this in your curriculum:

I'm going to try a mix of printing some of the curriculum material + using the web site.

18. Any additional comments or thoughts about the entire experience?

Keep me posted on how it's going!

Participant 6

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					X
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?				X	
3. How capable do you feel about navigating the website after this professional development?					X
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?					X
5. How comfortable would you be training another teacher on how to use the website?				X	

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- ☒ 1 (easy)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 (difficult)

7. What did you like about the PDF document?

*followed in a linear pattern with
the website*

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

What didn't you like about the PDF document?

n/a

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

- ☒ Yes
- ☐ No

Please explain:

Common errors and how to fix them

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

- ☒ Yes
- ☐ No

Please explain why or why not:

It is good to play with the site before learning how to use it - that way we know what is what

10. Select an answer in regard to the length of the introduction.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?

- ☒ Yes
- ☐ No

12. How much time do you think would be appropriate for website exploration?

10-15 min.

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☒ Correct amount of time
- ☐ Too long

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

It was straight forward - not too many steps.

16. Do you feel that you can create and customize a classroom again on your own?

Yes

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes
- ☐ No

Please elaborate on why or why not.

I think my second and/or third graders would enjoy using it

If yes, please elaborate on how you plan to include this in your curriculum:

March is Biography month in my library. I would group students & have them explore the people

18. Any additional comments or thoughts about the entire experience?

Great site, will be a good tool once it is finished.

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

Participant 7

After completing this professional development we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the PD, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
3. How capable do you feel about navigating the website after this professional development?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
4. How would you rate the capability of your fellow teacher, sitting next to you, in navigating the website?	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
5. How comfortable would you be training another teacher on how to use the website?	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

PDF Document

6. On a scale of 1-5, how easy did you find the PDF document to follow?

- ☒ 1 (easy)
☐ 2
☐ 3
☐ 4
☐ 5 (difficult)

7. What did you like about the PDF document?

Step by step instructions
w/ pictures

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

What didn't you like about the PDF document?

8. Were you hoping to learn something else about the website that you did not find in the PDF document?
- ☐ Yes
 - ☒ No

Please explain:

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?
- ☒ Yes
 - ☐ No

Please explain why or why not:

10. Select an answer in regard to the length of the introduction.
- ☐ Too short
 - ☒ Correct amount of time
 - ☐ Too long
11. Did you have enough time in the beginning of the Professional Development to explore the website on your own?
- ☒ Yes
 - ☐ No
12. How much time do you think would be appropriate for website exploration?

5-10 minutes is good

Interactive Qualifying Project – Professional Development Questionnaire – February 2012

13. Did the speaker go through the PDF document and walkthrough at an acceptable pace?

- ☒ Yes
- ☐ Too short
- ☐ Too long

14. Select an answer in regard to the length of the conclusion.

- ☐ Too short
- ☐ Correct amount of time
- ☒ Too long

Exploration at the end

At the end, we had explored enough.

15. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

It was a bit confusing, but having us actually create one was helpful.

16. Do you feel that you can create and customize a classroom again on your own?

Yes

Implementation

17. Do you plan to use this website in your classroom?

- ☒ Yes
- ☐ No

Please elaborate on why or why not.

I think the students will find it engaging.

If yes, please elaborate on how you plan to include this in your curriculum:

As a station during Daily 5 work + as homework

18. Any additional comments or thoughts about the entire experience?

Nice job! 😊

Appendix S: Responses from Focus Group

1. If you consider yourself comfortable with computers and websites, think about the program from a different point of view: someone who is not tech-savvy.
 - Do you think they would be comfortable using this website?
Yes (all participants).
“The navigation was very clear”
“The site and PDF keep pushing you through”
“Everything is very clear”
“The navigation of the site was very clear using the PDF and it was great to try things we learned before we left”
 - Do you think they would have learned enough about this website to use it effectively?
Yes (all participants)
“The PDF would be very helpful because it is very clear”
“It was important to try things before we left”
“Implementation works”
2. By a show of hands, how many of you plan on integrating this tool in your classroom? 7
 - Why?
“We are focusing on physics and inventions in science; it’s perfect for my students.”
“I teach second grade and we do a unit on biographies. It’s a good way to introduce them to interesting people.”
 - Why not?
“I plan to use the site, but if I didn’t have access to a computer lab, I may not use it.”
 - What are some ways to overcome the reasons raised by the previous question (the reasons for not using the website)?
“Project the site on a screen for the whole class to see, and print out worksheets for them to complete as homework.”
 - Please share some ways you plan on using this in your classroom?
“I would like to mix the website and online curriculum. Students could explore the website at school and then complete printed materials for homework”
“I can use the PDF curriculums as reading comprehension, and also have students work on the online activities.”

"It's biography month at my school in March, so the website fits in nicely. I might have students make a poster about a character from the website."

"One idea is to have students split into small groups and pick a character, then come together as a class and present what they have learned about their character."

3. Overall timing and areas covered during the professional development. In order to make this the best experience for other teachers, what would you recommend to be modified? (time spent on each part, sequence of parts, other)

"I liked that I got to play with the site before the tutorial."

"The sequence and timing were good."

"I suggest asking participants not to use Lillian during free exploration time, since she was the focus of the tutorial."

"I liked how we got to see the site before the tutorial."

What do you see as the advantages of the website?

"It is engaging!"

"It's interactive."

"I like how it highlights key vocabulary, and how you can listen to it."

"It's good for students to explore."

What are the downsides? (if wasn't answered in Q2)

"Definitions could be organized by reading level."

"University of California should be changed to read as one definition."

"I think kids might get caught up on all of the highlighted words."

"Some definitions didn't work with a click."

"Regarding the 'final sounds' activity under Benjamin Franklin, you were asked the final sound of the word, and for one word you had to add the letter 'e' which is not really a final sound."

"It would be beneficial for the website to be aligned with the common core standards."

Appendix T: Reflection Prompt

Reflection Prompt:

Please write a few paragraphs about the Reading and Math Explorers™ website professional development and your use of the website since then. We would appreciate if you address the following topics:

- How have you used the website in your classroom? If you have not been able to use it with your classroom and have used it in another way, please explain.
- Was it easy repeating the steps you learned during the professional development? Please explain why or why not?
- If you have used this website please comment on how the students responded to it?
- If you have used this written curriculum please comment on how the students responded to it?
- If you have not used the website yet please reflect on your experiences during the professional development.

We ask that you mail us your reflection by March 21st. Please do not forget we need to receive your reflection in order to process your stipend. If you have any questions please feel free to contact the project group at IQP-RME@WPI.EDU or Martha Cyr at mcyr@WPI.EDU.

Appendix U: Responses from Reflection

Participant 1

Dear Professor Cyr,

I have used the website with one of my higher students. She absolutely loved it!! She continues to ask me if she can go on it. I believe the biography part really advances the students comprehension skills . I also really appreciated the part that read to the students, both the biographies and the directions. I also love how it is aligned to our standards and common core!!!

It has been difficult to get students on it for the following reasons: I have ELL students in my class and their reading teacher had been MEPA testing for the last 2 weeks. So they were with me at reading time. I only have one computer in my classroom and they needed to use it to do a program called Headsprout. We do have a computer lab but all the children have to do 2 set computer programs a day. They are called Fast Forward and Headsprout.

I plan on continuing to use it in the following weeks with more of my higher level students. They have more time to use the classroom computer. I also plan on trying it with 2 of my own children at home.

Thank you very much for this opportunity. It is greatly appreciated.

Participant 2

How have you used the website in your classroom?

I took all my students down to the computer lab to have them try it out. I modeled for them how to use the website on the projector. I also modeled all the components of the website and how to get from activity to activity. I encouraged my students to try out Lillian because she was the most developed character on the website. I allowed them to explore any of the children on the website.

Was it easy repeating the steps you learned during the professional development?

Yes, the professional development was very beneficial to help me know where everything was on the website.

If you have used this website please comment on how the students responded to it.

I got mixed reviews on this website. Students were definitely discouraged that the website was not finished but I told them that they were a part of this super cool study that was going on at WPI. They liked that there was audio on Lillian and they liked the word creator on the characters. What frustrated many students was that many of the words they created were not valid even though they were real words. They also thought the language arts activities were too easy. They liked the math activities. They found it easy to navigate through the website.

Would it be helpful to have some or all the activities available as worksheets on the website?

Yes, it would be great for students to work on this website while at school and then have a follow up worksheet.

Participant 3

March 21, 2012

I have used the website during Social Studies. We do a unit on biographies and I used the website with the students on the interactive white board. We research Benjamin Franklin and George Washington Carver. Using this site the children read about the lives of each of these famous Americans under my supervision.

In reference to Benjamin Franklin, we found that the Biography questions were age appropriate and worked well. Unfortunately, the activity called Creating New Words was not as easy to complete, since there are only 15 predetermined words that are considered correct. There are many more correct words, but they are not acceptable in the activity. The Final Sounds Activity was successful. The children enjoyed dragging the final letter to complete each word. We followed up with reasons why those words were chosen and what they had to do with Benjamin Franklin. Sequencing and Sort It were equally successful. The Word Search Activities were fun to do. The advanced Word Search however has some mistakes. The words printing, lightning and glasses are misspelled. The word electricity does not have the y highlighted when you click it on. The children were able to complete each activity with limited teacher support.

In reference to George Washington Carver, George's Biography was easy to understand and also age appropriate. The children clicked on several of the unknown words as they went along, which made for better understanding. The biography questions were easy to understand and the children did a nice job responding correctly. Again with Creating New Words there are many more words that can be made with the letters in George Washington Carver's name than the 15 pre-determined words. This can be confusing to children if they do this activity independently. Also in the directions, it says, "Type twelve of the words that can be made from the letters in her name" ...this should read, in HIS name. The Final Sounds, Sequencing and Sort It activities all worked well.

I modeled the Benjamin Franklin activities with the whole class. Individual students used the Interactive white board to complete the activities in front of their peers. The children were then able to go on the website and do the same thing with George Washington Carver. They enjoyed both the whole group activity and the individual activity.

I am enjoying using the site because of the steps you took us through during our professional development. Your students did a wonderful job with this entire project. I feel very lucky to have had this opportunity and expect that I will continue to use the other famous people on the website with my students.

Participant 4

3/18/12

I showed the class the website in small groups. I had them go onto the site and explore with me in small groups. I did this with my middle to high achieving students in my first grade class. The website was not shown to my lowest students as they struggle with reading and other academic areas. I also sent the website information home with my students. I let the parents and children know about using it at home as an enrichment activity. I also shared the website with two other teachers at my school. We do a unit on famous Americans so the website ties into our curriculum.

I found it easy enough to repeat the steps shown in the professional development. The steps were easy to repeat because I had the information presented well to me and because I had a chance to explore the website and ask questions at the professional development session.

The students I used the website with were excited to try it out! They were interested in the site and had fun exploring it! I guided them to go to certain characters and certain areas that I knew they could be successful on and that tied into our curriculum. I have also used some of the worksheets to reinforce what the children were learning. I have not used any of the reading suggestions. It would be extremely helpful to have all of the activities available as worksheets on the website.

I thought the professional development was quite helpful and well run. The website was easy to manipulate and figure out. It was helpful to have a chance to explore the site and ask questions during the professional development session. I look forward to doing more with this site and continuing to share it with my students.

Participant 5

We haven't had the opportunity to use the Website in the classroom, but I did give my class most of the Lillian Gilbreth material as a sort of thematic set of work for the week. They loved it! They just dove into each section, and seemed to truly enjoy the work. I really appreciated the cross-curriculum connections; my students were able to weave everything together over the course of the week.

We are in the middle of science fair work and other computer science work, which has made it difficult to incorporate the web site into the week. But once science fair is done, we're going to try using it in class to begin with; then I'll add the web site as a homework option.

I really like the online math worksheets. I'd love the option to use part of the material as in-class worksheets and part as online exploration/homework. Sometimes hard copy works better, or is a good supplement to online opportunities.

Your training was very clear and straightforward. I feel comfortable that I'll be able to set things up for my students and make them comfortable using the site. The site is clean and easy to use, and your user instructions are user-friendly.

I think you have done an excellent job morphing the content-rich material into an appealing, user-friendly web site. If you ever want additional feedback or testing, I'm sure my students will be willing to help you out, as will I.

Thank you for the opportunity to test out your site and materials. This is a great idea! It's easy to use, easy to set up, and provides students with great information in an enjoyable format.

Best regards,

Participant 6

March 17, 2012

I am the library teacher for the Prescott Elementary School in Norwood, MA. I teach all of the classes in the building at least once a week, the lower grades come twice a week. For the month of March, I have been working on biographies with my students. Prior to using this software, the students read and listened to a few different biographies and knew what characteristics were represented in a good biography.

I used this program with my second graders – two classes of 22 students each. Once a week I see these students for 30 min. in the computer lab which is where we used this program. I linked the website to my second grade web page (<http://www.norwood.k12.ma.us/subsite/pst/teacher/16/grade-2-7197>) and had the students access it from there.

I gave the students a brief history of the site and why they were using it. I modeled how to access the biography, the activities, and how to hover the mouse over the underlined words to check for the definition. I divided the students into groups of two or three and gave each group a different person. Due to time constraints, I did not require that they carefully read the biographies. Instead, they were to scan the information and then move onto the activities. My lower readers were given Lillian so that they could listen to her biography. I monitored their progress and visually kept track of how they were doing. Although I did not use the classroom customization options, I am confident that I will be able to do this, based on the practice I received at the training, should I decide to at a later date.

Overall, the students reacted favorably to the program. If they “finished” the assigned person, they were allowed to move onto another person of their choice. They enjoyed the variety of the programs, asked each other how they got to certain things, and generated some dialog among themselves, and with me, on how they did playing various games. They quickly figured out that green represented a correct answer, red an incorrect one. Because of their age, most of the activities were access able to them and they did well. A few asked me if they could play this at home and if we were going to “do this again” next week.

However, they did get frustrated by a few glitches in the program. The “create new words” caused the most frustration because they knew they were typing in accurate words, but they were going into the “incorrect” word box. I suggested that they try to find words that had to do with the person – maybe words from the biography – and they were a bit more successful. But, as an experiment, I gave the second class a worksheet of this activity and we shared the words they came up with as a group. The worksheet generated more positive feedback than the website for this activity. Because spelling is an issue for many of them, a paper version will always be more successful than the online version unless the program is written to recognize

popular misspellings. (Having the worksheet available in the program would have saved a little time, but it was easy enough to access during the class because I had downloaded it to my desktop.)

Another issue was the “final sound” activity. This was mentioned in the training as an activity that was not as well designed as the others and my students did not do so well with it – according to the program. I observed students dragging accurate endings into the boxes, but the program did not recognize many of these. A few of the “sort it” activities gave the students all red words – even when they were correct – but it did not seem to bother the students.

Some of the activities did not work at all. The students could not drag the words to complete the sentences or the words would not drag to the boxes. But once I told them to skip that activity and move onto another one, the students were not too troubled by it.

They enjoyed the sequencing activities and a few students tried some of the math activities with some success. The “geometric objects” activity was a favorite and would not have been as much fun in worksheet format.

I enjoyed the training session and liked sharing ideas with the other teachers there as to how we were going to use this software. I came away for the training with the confidence that I could teach my students to use the program and answer any questions they may have. I plan to use this with my third graders as well – but that won’t happen for a few weeks due to state testing and schedule shuffling. I would be happy to e-mail my results to you if you are interested. I also plan to keep the link live on my website for a few more weeks and see how many of them voluntarily go to it during free time. If you would like me to remove the link prior to mid-April, just let me know.

Thanks for giving me the opportunity to explore this program. I think it has some glitches to work out, but the overall idea is great and it is visually appealing to the students. It was easy to learn to use for both myself and the students. The red and green was enough feedback to keep them interested – they did not need dancing cows or balloons or clapping sounds to keep them going.

On a personal note, I think all of you did a great job with the training. You kept us on task, answered our questions, and remained professional throughout. Good luck to all of you – you did a remarkable job!

Participant 7

I just found the letter about writing about our experiences. I hope this okay but I am just going to include it in this email. It is faster for me and with MCAS this week, it is probably your best bet of getting a response from me.

I have not used the site in my classroom yet. Mainly this is because we have been preparing for MCAS and that takes over our lives for the most part. We are finished with that this week though and I plan to start sharing the site with my students then. We have an upcoming event called a Wax Museum. The students research a historical figure and then give a presentation dressed as the character. It is a lot of fun and the students really enjoy it. I plan on sharing the site to see if any of the students chose to do their reports on one of the characters from the site. I am also planning on using one of the characters as I am sharing how to collect information on our characters.

I found the professional development to be very thorough and I liked how there a printed copy of the instructions so as I went back and tried to replicate what I had learned in the lesson on my own, I was able to refer to the directions to help me. I am not a person who remembers how things work unless I am using them on a regular basis, so this was very helpful for me.

I have not used the written curriculum but I do plan on doing so. Much of the curriculum is for the younger grades but I do think there is a large selection of activities for the 4th grade. I was impressed with the amount of resources that were available and I am excited to see how quickly you are able to get them on the website. It will be interesting to see how the site continues to develop and what direction it takes. I would like to see more resources developed that focus on reading comprehension that are not so literal. Higher level comprehension skills are a huge focus in 4th grade and I look forward to seeing more for that piece but I am very impressed with what it currently available.

Participant 8

I have used the Reading and Math Explorers on two occasions with 4th grade LEP students in a one on one setting. The site was easy for the children to navigate though I wished that the biographies were presented on one screen, rather than a paragraph per screen. I may feel differently about this as I use it with other grade levels. I did not use the math exercises as we were focusing on ELA at that time, but I do want to explore those exercises as well with my students. The two students who used the site responded well to it though it was a limited exposure. I do look forward to using the website more before the end of the year. I think this site has appeal and curricular value with LEP students, particularly because it is culturally grounded with biography, though I think the highlighted vocabulary is not in sync with this population.

The professional development was fine. I appreciated that you were able to work with me electronically. The prompts were easy to follow and it has been easy to repeat the steps. When I have stumbled I have been able to pull up the tutorial and revisit it with no problem.

I am unaware of any written curriculum that goes with this website, but would absolutely love it. Associated reading would be most welcome. Biography is an integral component of the ELA curriculum, so to have multiple options to access it can only be a plus. Also to have the option to have the activities available as worksheets would be good. I don't generally gravitate toward worksheets but it would be a good option to have in that multiple computers are often not available and children without a home computer could continue or review the activities at home with that option.

Thanks for the opportunity to preview and use this website. Again, I think it has appeal and look forward to exploring it more.

Participant 9

As of now, I have not used the Reading and Math Explorers website in my classroom. The reason being for these is because with getting ready for the MCAS English Language Arts test that was in March, there was little for any extra supplemental curriculum. Another reason I have not used it in my fourth grade classroom is because it seems to be geared toward younger children. I don't think my fourth graders would like the feel of the website and would think it's for the younger grades. The majority of the activities on the site are not at a level that will challenge most of my students at this time. In the future, I could see myself using the reading part of the site as a remediation for some of my lower students.

The professional development was very easy to follow. The steps were clear and concise. I was trying to go back onto the site and sign in but I had lost my log in information and I couldn't find a spot on the site to reclaim past passwords (unless I was looking at the wrong part of the site).

It could be beneficial to have some of the items on the website available as worksheets. Those students that do not have computer access at home could use the worksheets to be able to do some reading for homework and then be able to come into school to complete assignments on the computers there.

One other suggestion I have is to add more math activities. It seems like the site is much more heavy on reading activities.

Appendix V: Altered Version of Post PD Feedback for Take Home Participants

Name (Optional): _____

Grade Level (Optional): _____ Number of years teaching: _____

After completing the tutorial, we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the tutorial, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?					
3. How capable do you feel about navigating the website after this professional development?					
4. How comfortable would you be training another teacher on how to use the website?					

PDF Document

5. On a scale of 1-5, how easy did you find the PDF document to follow?
- 1 (easy)
 - 2
 - 3
 - 4

- 5 (difficult)

6. What did you like about the PDF document?

What didn't you like about the PDF document?

7. Were you hoping to learn something else about the website that you did not find in the PDF document?
- Yes
 - No

Please explain:

Professional Development Program

8. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?
- Yes
 - No

Please explain why or why not:

9. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

10. Do you feel that you can create and customize a classroom again on your own?

Implementation

11. Do you plan to use this website in your classroom?
- ☐ Yes
 - ☐ No

Please elaborate on why or why not.

If yes, please elaborate on how you plan to include this in your curriculum:

12. Any additional comments or thoughts about the entire experience?

General Questions

3. If you consider yourself comfortable with computers and websites, think about the program from a different point of view: someone who is not tech-savvy.
- Do you think they would be comfortable using this website?

- Do you think they would have learned enough about this website to use it effectively?

What do you see as the advantages of the website?

What are the downsides?

Appendix W: Responses from Take Home Participants for Altered Version of Post PD Feedback

Participant 8

After completing the tutorial, we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the tutorial, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					x
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?				x	
3. How capable do you feel about navigating the website after this professional development?				x	
4. How comfortable would you be training another teacher on how to use the website?				x	

PDF Document

5. On a scale of 1-5, how easy did you find the PDF document to follow?

1

6. What did you like about the PDF document?

It was so user friendly.

7. What didn't you like about the PDF document?

Gigantic font!

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

No

Please explain:

I had no expectations to begin with.

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

Yes

Please explain why or why not:

Basically, yes, because I think you have to browse to understand it well.

10. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

It was straight forward.

11. Do you feel that you can create and customize a classroom again on your own?

yes

Implementation

12. Do you plan to use this website in your classroom?

Yes, with small groups.

Please elaborate on why or why not.

I think this website has features that can work well with ELLs .

If yes, please elaborate on how you plan to include this in your curriculum:

I work in conjunction with classroom teachers. This website offers a wonderful supplement to what is being covered in the mainstream curriculum.

13. Any additional comments or thoughts about the entire experience?

General Questions

4. If you consider yourself comfortable with computers and websites, think about the program from a different point of view: someone who is not tech-savvy.

- Do you think they would be comfortable using this website/

Yes. I think it is simple enough so as not to be intimidating, or too time consuming in setting up the exercised.

- Do you think they would have learned enough about this website to use it effectively?

Yes.

What do you see as the advantages of the website?

Simplicity to use, audio feature for use with ELLs, dictionary feature, and the biography form

What are the downsides?

From an ELL perspective, the highlighted vocabulary seems randomly chosen (!) and the definitions are not given in kid friendly vocabulary. For example 'walked' is highlighted and the definition is given as 'traveled by foot'. 'Walked' is likely more familiar to kids than 'traveled'. Also, a word like 'crowded' might cause confusion but is not defined. Again, this is from an ESL perspective.

Participant 9

After completing the tutorial, we would like to learn about your experience in order to improve it for future teachers. This survey intends to capture your true thoughts about the tutorial, so we ask that you be honest.

Survey

- For the following set of questions, choose the number that best evaluates the question.

	least or strongly disagree				most or strongly agree
	1	2	3	4	5
1. How comfortable are you using a computer and browsing a website?					x
2. How knowledgeable do you feel about the purpose of the Reading and Math Explorer website after this professional development?			x		
3. How capable do you feel about navigating the website after this professional development?				x	
4. How comfortable would you be training another teacher on how to use the website?				x	

PDF Document

5. On a scale of 1-5, how easy did you find the PDF document to follow?

1

6. What did you like about the PDF document?

It was very easy to follow. It was also nice to have the pictures to accompany each step.

7. What didn't you like about the PDF document?

There was nothing I didn't like but I did find at least one typo. Now I wish I had remembered exactly where it was to tell you, it was somewhere in the middle.

8. Were you hoping to learn something else about the website that you did not find in the PDF document?

Yes

Please explain:

I was hoping to find out what grade level each activity is tailored to. It would make it easier to select activities without having to try each one individually.

Professional Development Program

9. Do you think we gave enough background about the website and curriculum before going through the navigation of the website?

Yes

Please explain why or why not:

I hate to admit this, being a teacher, but I don't usually read that part, I am more worried about the actual activities.

10. Please comment on the process of creating a new class (was it a straight forward process? Did you find it challenging? Any feedback on how we can make it better?)

I thought the process was very easy. My one piece of feedback would be to make it clear that one account is your teacher account and password and that the other one that you create is the student/class account, that it will be for the part that the kids see when they sign in.

11. Do you feel that you can create and customize a classroom again on your own?

Yes

Implementation

12. Do you plan to use this website in your classroom?

I am not sure

Please elaborate on why or why not.

I will have to look more closely at the activities that are provided. So far they seem a little too easy for my fourth graders. I would also have to go through each activity and link it to the appropriate unit in our curriculum.

If yes, please elaborate on how you plan to include this in your curriculum:

13. Any additional comments or thoughts about the entire experience?

I really do want to stress that the tutorial was very easy to use and follow.

General Questions

5. If you consider yourself comfortable with computers and websites, think about the program from a different point of view: someone who is not tech-savvy.

- Do you think they would be comfortable using this website?

Yes, it is very easy to use, especially how it automatically sends you to the next activity as you finish each one.

- Do you think they would have learned enough about this website to use it effectively?

Yes

What do you see as the advantages of the website?

I really like the link to the literature.

What are the downsides?

It looks kind of young- the graphics would not be overly appealing to my 9 and 10 year olds.

Appendix X: Website Errors

- Definitions need to be tailored more for grades K-4
- “University of California” needs to be made one definition
- Teachers could only create one classroom under their username
- All activities need to be checked for any technical errors