

**Promoting 21<sup>st</sup> Century Technology Instructional Design in the ClassroomBy  
Building upon the Classrooms for the Future Initiative**

Grant Proposal

**Executive Summary**

The discrepancy between the ways many k-12 students are taught by the way they learn suggests a digital divide between teachers and the world in which their students live. The Eltown Area School District, a suburban district located in Lower Bucks County Pennsylvania, proposes to cater to the evolving learning styles of students by educating educators on technology pedagogy. To learn efficient record keeping, increase quality and relevance of instruction, and better prepare students for the 21<sup>st</sup> Century world in which they live, EASD wants to build upon the Classrooms for the Future Initiative that was established, but quickly neglected within two years. The follow-through of this previously introduced initiative requires supplementing and replacing technology tools and instructing teachers how to integrate them relevantly within their subject areas. To complete the project, The Eltown Area School District requests \$61410 in funding over a two-year period beginning in August 2012.

**Setting**

**Community**

EASD totes itself as being “a student-centered learning community, [that] will prepare all students to achieve their highest potential and to demonstrate mastery of skills and talents necessary for life in a global society by providing a diverse educational

program with the involvement and support of families and community”

<http://www.Eltown Area .k12.pa.us>).

There are eleven elementary schools, three middle schools, and one high school (with two campuses) in The Eltown Area School District. While the average class size of the elementary school is 23 students, it is 25 for at the middle and high school level. Each certified staff member is issued a Lenova Ideapad and the district promotes the use of the java program SmartWeb for Attendance and Grading; however it is only mandatory to use for marking period grades. (Many teachers opt to use pen and paper or alternative software for record-keeping.)

In conjunction with the previously dismissed CFF initiative, all schools received technology equipment in the form of Lenova Laptops, Promethean Boards, and laptop carts housing one printer and 30 Lenova Ideapad Laptops for student use. The laptop carts are shared among approximately five teachers at the high school level, and dispersed more generously at the elementary level. Due to district budget cuts and ailing standardized test scores, the Writing Center Computer Lab at the high school's East Campus was given the Literacy Department. The 27 desktop computers in the former writing lab are now equipped with Scholastic Reading Inventory software which is used solely by students enrolled in reading. The library at the high school's East Campus has a class set of desktop computers, one cart of Lenova laptops, and one cart of Dell laptops. Teachers within the building can sign out library time for their classes to conduct internet research, and the head librarian directs students on how to access and use databases.

Internet access inside the EASD's library and classrooms is restricted and often slow or completely absent.

### **Students**

Caucasian students compose 88% of district enrollment and Asian and African American students each make up 4.8% of EASD's ethnic composition. According to school district data, 90% of Eltown Area High School's 2012 graduating class are planning to attend college. In a poll conducted of 52 tenth grade students and 27 eleventh grade students, 48 students either possessed a smart phone device or planned on getting one with the next three months. Of the 79 students polled, all but two have reliable internet access outside of the school. In the same survey, the majority of students claimed to have at least 2 personal accounts on the Internet, most of which included social networking and email.

### **Staff**

Eltown Area employs 40 administrators, 810 certified teachers, and 697 support staff. Teachers are aware that there are learning tools available to them, but they do not use them because they do not know how or have attempted to do so, but found that the tools did not work properly. This frustration was compounded by recent budget cuts that forced Classroom for the Future coaches to return to the classrooms full-time rather than spend a portion of their prep periods assisting self-proclaimed luddites within the faculty.

Having taught English in the district's high school for two years, I saw the faculty's frustration with technology first-hand. Also, while I consider myself to be savvy in this realm, I was alarmed at how much more my students knew about certain aspects of

technology that I knew. At the same time, I was even more shocked that they were unaware of netiquette and tools that could aid their learning. For example, students know how to download torrents, but they do not know that they are violating intellectual property rights. Furthermore, they do not know the penalties of their online actions. Still, as tech-savvy as Eltown Area students appear, they do not know how to use simple research techniques like search booleans and cannot always distinguish a reliable website from an unreliable source.

More recently, a former student of mine who graduated emailed me about her first year in college. One of her concerns was a hybrid class she was taking, for she was forced to use the school's Blackboard system to complete her assignments. Upset with her unfamiliarity of this system in amid a class of freshmen who had used it in high school, she lamented that Eltown Area did not prepare her for college.

By investigating, remedying, and reflecting on teachers' use of instructional technology, The Eltown Area School District intends to realize its aforementioned mission statement.

### **Statement of Need**

Why does EASD's staff need instructional technology support? A report titled "Listening to Student Voices on Technology" in a book published by the International Society for Technology in Education offers a plethora of reasons, which include the following findings:

- Computer and Internet use is growing

- Students are sophisticated users
- Technology is important to student's education
- Technology is not "extra"
- In-school access to technology is limited
- Computers and Internet are communication tools first
- Metaphors describe how students use the internet for school
  - The Internet as a virtual guidance counselor
  - The Internet as a virtual textbook and reference library
  - The Internet as a virtual tutor, study short-cut, study group
  - The Internet as virtual locker, backpack, notebook
- Technology has caused students to approach life differently, but adults act as though nothing has changed
- Students desire increased in-school access
- Students want to use technology to learn, and in a variety of ways
- Students want challenging, technologically oriented instructional activities
- Students want adults to move beyond using the "Internet for Internet's sake"
- Students want to learn the basics, too

Although these student voices are from 2005, it unfortunately still applies to Eltown Area in 2012 (Solomon 32). Even major pedagogical theories have been modified to recognize the needs today's learners. Bloom's taxonomy, for example, has been revised to promote a more hands-on, 21<sup>st</sup> century learner focus. Another theory that supports a modification of teacher-instruction can be found in constructivism. Constructivism occurs when a student constructs knowledge out of what he or she already knows

(Solomon 38). Rather than passively listening to a teacher lecture about the information, students are more active in deriving new understanding. Project-based learning, an example of constructivism, allows students to sharpen their critical thinking skills by using “inquiry-based methods to engage with issues and questions that are rich, real and relevant to their lives” (39). This where technology and teacher training is most needed.

This research is sound, hence the logic behind Eltown Area’s Classroom’s for the Future Initiative. So, if using 21<sup>st</sup> Century tools is such a great idea, why did it not work during the first attempt with the CFF program? Ironically, the CFF program did not seem to work well with teachers for the same reason students are reported unengaged in their EASD classes—the instruction is passive, irrelevant, and lacking practice. In a focus group of nine high school teachers who had been teaching in the district for at least five years, seven of them admitted to being intimidated by the technology resources available to them.

As one 9<sup>th</sup> Grade ELA teacher claims, “it was overwhelming. What we learned [during the CFF course] was exciting, but it was too fast and too theoretical for immediate application in the classroom. When I’ve got 80 essays to grade and two elementary-aged children to care for at the end of the day, not to mention lesson plans, I just can’t devote the time to researching these [tools].” This sentiment was echoed by a geometry teacher who added, “I spent over an hour learning about how great Story Mapping technology is, but what’s the point of knowing it if I can’t use it?”

While these teachers stay within their comfort level, universities all over the country are adapting pedagogical techniques that could potentially invigorate or intimidate new

Eltown Area graduates. This instructional gap needs to be bridged not only to make the post-high school transition easier, but to rejuvenate learning and instruction in students and teachers.

Promoting 21<sup>st</sup> Century Technology Instructional Design in the Classroom aims to be a process, not a rushed course, by which different segments of Eltown Area’s certified staff are supported in their integration of technology. Ideally, such instruction will serve to minimize the time they spend grading and conducting other menial teaching tasks so that these teachers can reflect more on their lesson planning. This time around, the learning module for teachers will be designed for their convenience and progress.

Arapohoe High School director of technology, Karl Fisch, articulated this need for students by defining literacy as using “critical thinking skills to analyze, critique, and evaluate information—essential skills in an information-abundant society” (Walker 24).

## **Proposed Program**

### **Overview and Goals**

A lot has been learned since the implementation of the CFF program in The Eltown Area School District. The mandatory after-school meetings were inefficient because there were too many teachers from different grades and subject areas to focus on a topic pertinent to all of them. The large, paper-bound pamphlets were difficult to travel with and navigate through. The pedagogical theory behind the practice of technology integration required hours of reading, and the online unit discussion boards were visited infrequently and were poorly facilitated. Learning from this, EASD’s goal of Promoting

21<sup>st</sup> Century Technology Instructional Design in the Classroom will be student-centers (with the teacher in this case being the student.)

### **Instructional Design Specifics**

During the first year, the program will begin at high school level, with implementation of it at the middle and elementary schools during the second year. Teachers will be broken up into cohorts based on their content area and grade level. Each cohort will be lead by an outsourced technology staff member who is familiar with that subject area. To alleviate burden and provide incentive for the teachers to participate, these smaller groups will discuss the most convenient times to meet, whether it be before school, during lunch, during prep, etc.

As the course progresses, teachers will be presented with the option of participating in class via webcam from their homes. Missed sessions can be made up with other cohorts within the same subject area or by reading the material and taking a quiz on it. This material will be consolidated in an online database to eliminate the clutter and cost of printed material. This website management of the program will also be host to a best practices showcase, where teachers can submit ideas and lesson plans in a way that is both organized and inspirational. Their participation in this technology integration program will help these teachers earn ACT 48 credits throughout the year.

### **Materials Needed**

All classrooms of high school certified staff should contain the following materials:

- Teacher laptop with word processing and smartboard software installed



- LCD Projector
- Speakers
- Promethean Board
- Promethean Stylus
- Mobile Laptop Cart and Printer Setup/ shared between two classrooms at most
- Ethernet cable/ Internet Access Spot

### **Schedule**

This schedule is designed to ease the teacher into the role of 21<sup>st</sup> Century educator. The first phase focuses on what is currently going on in the areas of curriculum and record keeping and offering new ways to streamline the process. The logic behind this is that teachers will learn to work more efficiently and save time on tasks that they are already doing. Also, the cohort leader will be able to discuss the curriculum and offer simple-to-use resources that are directly related to what the teacher's are currently teaching. Thus, this schedule is meant to inspire immediate use of the tools. The later phases review and build upon what teachers have been taught. The last phase incorporates e-learning facilitation to benefit students who will soon be entering universities and the global work force. Since the middle and elementary levels have had more instruction and equipment with the previously dismantled CFF program, they will begin the Technology Instructional Design program during Year 2 and repeat what the high school teachers did during year one. Each module will be tweaked to address the particular needs of each cohort.

- **Year 1**

- **PHASE I: Months 1-3**

- 12 hours

- Decide how Phase I meetings should be arranged (Example: 12 one hour meeting weekly, 24 half hour meetings weekly, use of prep time, etc.)
    - Subject Area Curriculum Review
      - Goals and current means of instruction
      - Forms of assessment
      - Textbook Review
    - Current Record Keeping Means
      - Parental Contact Logs
      - Email
      - Grades
      - Individualized Education Plans
    - Revisit and Revamp aspects of content area curricula
      - Introduce Online Teaching Tools
        - Discovery Education,
        - Fast assessment without grading
        - Textbook Portals
    - Introduce Record Keeping and Grading Options
      - Snapgrades online database
      - Formative assessment links/Feedback without grading
      - RSS feeds/ homework pages for parent communication
    - Student Survey of Program

- **PHASE II Months 4-7**

- 11 hours

- Determine meeting arrangement and experiment w/at least webcam meeting
    - Hardware: Promethean Board and Projector
      - Calibrating/ Setting Up
      - Basic Use with Individual Practice
      - Overview of Promethean Board Strategies
      - Specific Lesson Planning Ideas with board
        - Arranged according to aspects of curriculum (ex: In the English Cohort, they might spend on day focusing on use in Poetry, another day focusing on Vocabulary lesson, etc.)
    - Cohort leader observation of teacher in classroom
    - Time for Reflection/ Assessment of Technology Integration Program

- **PHASE III Months 8-10**
  - 10 hours
    - Determine meeting arrangement
    - Student-Centered Instruction
  - **Web 2.0 Tools**
    - Blogs, Wikis, Podcasts overview
    - Discussion of how these tools can put students in control of their learning
    - Overview of content-specific lesson plans that incorporate student-centered instruction using web 2.0
    - Cohort leader observation of teacher in classroom
    - Time for Reflection/ Assessment of Technology Integration Program
    - Student Survey of Program
  
- **PHASE IV Summer**
  - Three day high school teacher workshop offered two times during summer
  - Three day middle and elementary level offered two times during the summer
  - Share Best Practices
  - Introduce teacher websites
  - Introduce Eltown Area Technology Wiki
    - Track progress
    - Share content area lesson plans
    - Communicate with peers
  
- **Year 2**
  - **PHASE V Months 1-3**
    - 7 hours at the high school level
    - 10 hours at the middle and elementary level
      - Determine meeting arrangement
      - These meetings will focus on meeting special needs students and addressing IEP's and 504 plans with technology. Lessons will vary depending on cohort.
      - Cohort leader observation of teacher in classroom
      - Student Survey of Program

- **PHASE VI Months 4-7**
  - 7 hours at the high school level
  - 10 hours at the middle and elementary level
    - Determine meeting arrangement
    - This phase will be a continuation of project-based learning in the classroom with an introduction to new investigative and gaming methods of learning. Lessons will vary depending on cohort.
    - Cohort leader observation of teacher in classroom
  
- **PHASE VII Months 8-10**
  - 7 hours at the high school level
  - 10 hours at the middle and elementary level
    - Determine meeting arrangement
    - This phase will focus on e-learning and hybrid models of instruction. While Eltown Area does offer online classes, they are considering it for home-bound students and other special cases. This inexpensive model will be introduced to teachers as an option and they are encouraged to experiment with it, especially as more universities are moving toward online venues such as Blackboard.
    - Edmodo, Blackboard, Online Backpacks.
    - Cohort leader observation of teacher in classroom
    - Student Survey of Program
  
- **PHASE VIII Summer**
  - One day workshop for high school teachers offered two times during summer
  - Two day workshop for elementary and middle school teachers.
    - Time for Reflection/ Assessment of Technology Integration Program

- **Method of Evaluation**

Assessment of The Eltown Area School District Technology Initiative will be continuous and mirror the theory promoted by the program. In other words, much of the evaluation of teachers will be project-based. Team leaders will observe each cohort teacher in his or her classroom at least one time during each of the six academic school year phases. In turn, teachers will be given the opportunity to periodically assess the program via anonymous surveys administered by the integration technology team. These surveys will provide feedback so that each cohort leader can differentiate his or her instruction to meet the teachers' needs and concerns.

Another aspect of the technology integration process is the students' feedback. At the end of phases one and three, teachers will be required to administer an appraisal of their instruction. To ensure validity, this 10-minute assessment will require students to log onto a survey and answer questions about the delivery of their curriculum and instruction as it pertains to the goals set out by the Technology Instructional Design program. During the summer phases, evaluation of the program's effect on teachers and learning will be discussed among teachers, cohort leaders, and administrators to determine the next course of action. Whereas the outsourced technology leaders will only work with the district for two years, teachers and administrators are encouraged to continue examining similar data on a semi-annual basis in light of standardized assessment scores.

### Proposed Budget

Need/Item	Cost per item	Quantity	Subtotal	Total
Additional Mobile Laptop Carts	1600	5	8000	8000
Promethean Software	100	1	8000	8100
LCD Projector	1000	6	6000	14100
Projector Ceiling Mounts	150	6	900	15000
Wireless Routers	35	6	210	15210
Promethean Boards and Mounts	1000	6	6000	21210
Teaching Materials and web maintenance	200	1	200	21410
Certified Instructors/Salary	8000	5	40000	61410
				<b>61410</b>

This budget reflects what EASD will need over the course of two years to find its technology integration program. Since the CFF program began in the middle and elementary schools, only the high school is significantly lacking in hardware and instruction. During year two, the instructors will split their time between schools in the district.

### Conclusion

Cyber-English teacher Dawn Hogue may as well have been speaking about Eltown Area School District when she said, “ Kids have the passion, the technical know-how, and the creativity, but they need educators to teach them how to use digital media constructively and responsibly. Most kids live in the digital world, but beyond the actual tools involved, their knowledge of how to make it work for them in the long run is pretty superficial. I know I can make these technologies help them communicate better and prepare them for life after school. That’s the power of the teacher” (Walker 27). By funding Eltown Area School District’s 21<sup>st</sup> Century Technology Instructional Design in the Classroom, you will be empowering teachers to engage and instill relevant skill sets in students.

## References

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