

**Iowa Learning Technology Commission
Integrated Evaluation and External Metaevaluation Report
For Harlan and Griswold Projects funded through the ILTC
2008-2009 Grant Year**

Final Third Party External Meta-Evaluation Report, September 18, 2009

**Submitted to:
Iowa Learning Technology Commission**

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1. Executive Summary

The Iowa Learning Technology Commission (ILTC) contracted with an external metaevaluation team to complete a report on the grantees during the third year of the ILTC funding. The metaevaluation team consisted of one member from each of the three Iowa Regents' Institutions, Iowa State University, the University of Northern Iowa, and The University of Iowa. In previous years, the team submitted one final report concerning all six grantees. During the 2008-09 cycle, it was decided that metaevaluators would submit separate reports, each concerning two of the school districts that received funding during that cycle. This report constitutes the metaevaluation conducted by The University of Iowa, Center for Evaluation and Assessment (CEA) on the ILTC-funded projects in Griswold and Harlan, Iowa.

Griswold Community School District (GCSD) and the Harlan Community School District (HCSD) are both small districts in western Iowa. GCSD's primary goal was to incorporate technology as a tool in their larger effort to provide differentiated instruction to better meet individual learners' needs. HCSD's primary goal was to use technology to expand upon their students' ability to access a large body of written resources, leading toward increased student achievement, particularly in reading and 21st century skills. HCSD's plan was also part of their movement toward a 1-to-1 environment in their middle and high schools.

GCSD purchased 80 laptop computers and a pilot team of teachers took part in professional development to learn to use the laptops in ways that help them differentiate instruction across the curriculum. Pilot team members then worked with their content areas peers to provide training and mentorship in using the technology in the classroom and began using technology as a tool for differentiation in their own classrooms. They found the pilot team approach to be a successful method for obtaining the professional development necessary and expanding the use of technology in a planned and thoughtful way throughout their schools. GCSD learned that the more that they could learn about subject-area specific uses of technology, the more successful they would be in using the technology in productive ways. They also found technology to be a more critical tool for differentiating instruction in some subject areas than others. However, even in the areas where technology use may not have met their needs for differentiating instruction, access to and use of laptops was a valuable resource for students' use in research and written work. GCSD was limited by the number of laptops that they were able to purchase, as well as by some elements of their infrastructure's capacity for using the computers as effectively as possible. They plan to continue to seek funding for a 1-to-1 environment within their schools and to improve their schools' infrastructure to support technology.

The GCSD supplied the CEA with two reports during the 2008-09 school year. The reports were based on a template given to them by the CEA to help them structure their evaluation of their project in a way that would provide CEA and the ILTC with important information about the changes that occurred in their schools during the year of the grant funding. CEA also conducted a site visit to each of the districts to provide

guidance to the schools in evaluating the effect of the projects on the schools. As detailed in previous metaevaluation reports to the ILTC, it is not realistic to document increases in student achievement in a district due to any particular intervention during a one-year cycle. The aim, therefore, of the internal evaluation and external metaevaluation should be to provide case studies concerning the activities of the schools related to their funding through ILTC and to describe the ways in which change took place during that year. The GCS D report included survey results from a limited number of students and teachers, and most of the teachers surveyed were members of the pilot team. Although the sample of teachers and students was small and not entirely representative of the schools' students or teachers, because the GCS D is following a model of spreading the intervention from the pilot team (and their students) to other teachers and students, the information they collected from these surveys appears to be an accurate way to depict the impact of the ILTC funding on the GCS D during the 2008-09 school year. Their survey findings were also consistent with the conversations the CEA metaevaluator conducted with pilot team teachers during the site visit and with observations of classrooms made during that visit.

HCS D's grant proposal called for the purchase of the VitalSource software that was intended to expand students' access to written resources. HCS D had conducted research concerning this software and planned to use it to increase student achievement in reading. While piloting the software, they decided that they could not achieve their goals unless the software could be used within the context of a 1-to-1 environment. Because of other capital projects in their district, HCS D did not have the funds to purchase the laptops or to make infrastructure improvements that would have been necessary to support the 1-to-1 environment. They did not want to purchase the software until they had the hardware and support to use the program in the way in which they believed it would be most effective. During a conversation with the metaevaluator, the HCS D staff indicated their desire to be "good stewards" of the state's money by postponing their purchases and intervention until they could carry the intervention out in what they believed to be the most promising manner. Consequently, they asked for and received permission to delay their funding until they could use the funds in the way they had proposed. CEA conducted a site visit to the HCS D prior to their decision to postpone the funding of their project until the next school year and provided guidance in how they can conduct an effective evaluation once they have begun to implement their project.

The GCS D project was a success in that it is providing students with access to technology across the curriculum and that it helped support the districts' goal of differentiating instruction to meet individual learners' needs. Despite encountering problems with computer warranties and service issues, the district's pilot team was successful in finding ways that the laptops can be used in both intended and unintended ways to further student learning.

2. Background

2.1 Purposes of this Work and this Report

The Iowa Learning Technology Commission grant recipients were each asked to provide internal evaluation information about their funded project accomplishments during 2008-2009. Each grantee's evaluation report was expected to address individual education plans for students; students' engagement and achievement; successful district-to-vendor relationships; research-based curricula and instruction; and the effective integration of technology and teacher training. The external meta-evaluator traveled to each site for a site visit, provided on-going evaluation and research consultation, reviewed grantees' evaluation plans and interim reports, suggested ways to address and document their project goals, and provided review and assistance where feasible and desirable. This third-party meta-evaluators' report provides the following:

1. Documentation and summaries of the evidence presented in the individual evaluation reports about the impact of the ILTC funding.
2. An evaluation of the quality of the evidence from these two reports and what can accurately be concluded from them.

3. Descriptions of the 2008-09 Projects

3.1 Griswold Community School District (GCSD)

The Griswold ILTC project was called *Using Technology to Differentiate Instruction*. This project was proposed as an important step in a five-year process of teacher professional development to improve the district's ability to address middle and high school students' individual learning needs through Differentiated Instruction. The overarching goal of the ILTC project was to include technology as a tool for differentiating instruction to increase student achievement.

To further that goal, the district created a technology pilot team, secured professional development for the pilot team, worked with their AEA technology consultant and district technology staff on using technology effectively, involved community and business members in the process, and acquired the resources they needed to achieve this goal.

The pilot team consisted of five teachers who worked together to learn effective ways to use technology to differentiate instruction within their curricular area. The pilot team members would then act as trainers and mentors to work with the other teachers in their school within and across curricular areas. Each year they emphasize using technology to differentiate in new ways; during the 2008-09 school year they worked on differentiating product, meaning that students are exposed to several ways to approach an assignment and then allowed to choose (to some extent) the way in which they demonstrate their knowledge (See GCSD report, Appendix A).

During the 2008-09 school year, the GCSD project served 29 teachers and 350 students in grades 6-12. Since professional development for the pilot team took place prior to the funding of the ILTC project, the 2008-09 year was spent with pilot team members

working on their own skills for using technology in the classroom and training other district teachers and staff in the use of technology to differentiate instruction. The district used their Wednesday early release professional development time for the technology and differentiated instruction training sessions.

Most of the ILTC funding was used for the purchase of 90 Tablet PCs for student use. The purchase of the Tablet PCs was supplemented by funding from the district for mounted projectors, Tablet PCs for the teachers, student response systems (for informal testing of student understanding), and the necessary software licenses for student and teacher use.

There were several partners involved in the GCSD ILTC project. The district originally developed a partnership with Gateway for the purchase of the Tablet PCs. After the purchase of the PCs, the Gateway Corporation declared bankruptcy; this resulted in the loss of warranties for the PCs and has resulted in ongoing concerns about service and parts for the PCs. The district is working with the former Gateway vendor agent to establish another avenue for problems, but their warranties will not be restored. To try to prevent problems with the Tablet PCs, the district has established a checkout policy to ensure that they know who is responsible for the computers at all times.

The Griswold Cooperative Telephone Company has also partnered with the district to provide both financial and technical advice. Griswold has also partnered with e-Instruction for training and technical advice.

The GCSD has worked to align their use of technology and differentiated instruction with their emphasis on improving instruction through use of Daggett's Rigor/Relevance Framework. Daggett's Framework promotes providing curriculum and instruction that maximizes student engagement as a necessary step toward increased student achievement. They report that in the next year, their professional development will explore technology use in the transition to the Iowa Core Curriculum and begin to use the Authentic Intellectual Work Model.

3.2 Harlan Community School District (HCSD)

The Harlan School District has not yet used their ILTC funding. Their project proposed the purchase of the software VitalSource as a means of improving their students' achievement in reading by providing access to reading materials. They tested the software and determined that the software would only be useful if they were able to use it in a 1-to-1 environment. They were unable to secure funding to purchase computers for the 1-to-1 initiative and therefore have delayed their implementation. In addition, they stated that during the 2008-09 school year, they did not have the bandwidth and wireless capacity necessary for the 1-to-1 environment and that too would have to be achieved before the VitalSource software could be used successfully.

The middle school principal in Harlan, Duane Magee, has since left the district for the Waukee School District.

The superintendent, Bill Decker (who was also a member of the ILTC commission) left the district in spring of 2009. The technology coordinator left the district and was replaced by Lisa Swanson. (Added 12-21-09) He said that the district has spoken with Vic Jaras at the ILTC and received permission to use the funds during the 2009 school year. CEA visited the Harlan Schools in February 2009 and provided them with meta-evaluative recommendations on how to conduct their evaluation of their project when they purchase their software and implement the project. Magee said that the interim superintendant of Harlan Schools, Bob Broomfield, would be the temporary contact concerning the ILTC funding.

Harlan Update from Lisa Swanson on 11-10-2009:

In lieu of the fact that the Harlan Community Schools 5-12 one-to-one initiative that was previously planned and documented in the original grant proposal did not occur, we sat down as a District and determined where are greatest needs were in regard to getting technology in the classrooms and into kids' hands.

We found that for us the greatest need was at the upper elementary and middle school levels. It is at these grade levels that the amount of up-to-date technology was significantly lacking. Given this, we decided to utilize the ILTC grant monies to place as much technology as possible in the hands of kids in grades 5-8 and purchased the following:

120 Bytespeed Netbooks to be divided into 4 mobile labs

4 Netbook carts to house the new Netbooks and make the labs mobile

4 Access Points to provide wireless access with the carts for the Netbooks

1 Virtual server solution that will serve virtual desktops to two virtual labs (25 thin-client machines in a 5th grade communications lab and 10 thin-client machines in the middle school media center)

All required licensing for the Operating system and Office software for both thin-client labs and for the netbooks

Unlimited user perpetual license of Equation Editor software for the Middle School math department

1 classroom set of Starry Night software for the Middle School science department

Unlimited user license of Froguts software for the Middle School science department

10 Refurbished desktop computers for the Middle School special education classrooms

5 Wizcom Reading Pens to primarily be used in the Middle School and Upper Elementary special education classrooms

50 Headphones to be checked out with the Netbooks when necessary

30 Microphones to be checked out with the Netbooks when necessary

7 Lumens DC210 Ladybug document cameras to be used in the Middle School and Upper Elementary classrooms - specifically science and language arts, but will be made mobile so they can be used in other areas as well

1 Color Laserjet printer for our Middle School Family Consumer Science classroom

1 Flatbed Photo Scanner for our Middle School yearbook classroom

12 8GB iPod Nanos - primarily to be used by the Middle School special education classrooms to assist students with reading difficulties.

Much of this technology has been purchased and delivered and we are in the process of getting it in the students hands. Some of the larger quantity purchases such as the Netbooks and carts are still in the process of being shipped and are not yet in our hands. In addition, some of the more complex implementations such as the virtual labs also are not fully in place yet - the equipment has been ordered and is being shipped, but the configuration of the virtual environment still needs to occur before students can begin utilizing the technology. We have done a considerable amount in the last three weeks since you and I talked, but there is still much to be done before we can say the purchases from the ILTC grant are complete and successfully in the hands of students.

Thank you,
Lisa Swanson
Technology Coordinator
Harlan Community School District

4. Outcomes on Specific Indicators

4.1 The Impact on Student Engagement

Griswold Community School District examined levels of student engagement in three ways; they continued their use of the Instructional Practices Inventory (IPI) and they supplemented that information with student and teacher surveys concerning student engagement.

GCSD reported that the Fall 2008 results of the IPI showed that when technology was in use in classrooms, the percentage of students who were actively engaged in learning was double that of other classrooms (10% vs. 5%) but said that the percentage was still not at the level they “would like to achieve”. The IPI report also indicated that the percent of

students “completely disengaged” was lower when using technology. GCSD had not yet compiled their spring 2009 IPI data, so they did not update this report.

GCSD surveyed a sample of 57 students in grades 7, 9, 10, and 11 about their interactions with technology in school. They asked students to describe their level of engagement when their teachers were using technology in the classroom and when they themselves were using technology for learning or to create projects or products. GCSD reported that 76% of the students said they were more engaged when their teachers were using technology and 83% said they felt more engaged when they themselves were using technology for learning. One student said, “I think we should use the computers more. I like using the computers. I like it when Mr. Schoning uses his computer in math class to explain things on the projector. It makes it easier to learn, in my opinion. I also really like the CPS things we do in biology. I like using computers in class.”

Students were asked to list the types of uses their teachers made of technology during instruction. Their list included: research, word processing, reviews and tests with student response systems, Google Earth projects, MovieMaker, Excel spreadsheets and graphs, Windows Journal, PowerPoints, graphic organizers with Inspiration, creating crossword puzzles, science labs, history projects, group projects, blogging, communication, and using a building and landscaping program. Students were also asked the ways that they themselves used technology during classroom time. Their list of their own uses included: PowerPoints (for reports in various subjects), papers, videos, Spanish projects, slide shows, math assignments, book projects, lab write-ups, blogs, newsletters, flyers, stories, websites, brochures, charts and graphs (Excel), resumes, cover letters, Mimio (interactive whiteboards) workbooks, Google Earth projects, graphic organizers (with Inspiration), and crossword puzzles.

GCSD also surveyed a random sample of five teachers (three from the pilot team and two other teachers) during May of 2009 concerning their use of technology in the classroom and their opinions on its impact on student engagement. Teachers listed the ways in which students were using technology in the classroom including: Internet research, creating reports and PowerPoint presentations, making movies (using video cameras and MovieMaker software) involving role playing and other creative skills, using student response systems for test preparation, using probeware in science labs, producing graphs from probeware data, creating VoiceThreads, blogging, creating Wikis, and submitting work electronically.

They also commented on their perception of student engagement. One teacher said, “The students are engaged and enjoying their learning. They enjoy having creative liberties and using technology. Engagement, in my opinion, is where I’ve seen the greatest increase.” Another teacher said, “The students have become very active with the blog and it has been a good resource for them in my Modern Issues class. I feel they are very engaged in using the PCs to research and create products as well. I did a survey at the end of the year with my students, and they want to have more projects using technology as many of them said they were more hands-on learners. They feel they are picking up

on more information as they do their research online and create products in class, than listening to lectures or doing worksheets.”

4.2 The Impact on Student Achievement

GCSD looked at student achievement through teacher and student surveys. Because the one-year grant period is too short to look at change in standardized test scores of any kind, teachers and students were asked about their perceptions of the impact of technology use on student achievement.

In the survey of 57 students in grades 7,9,10, and 11, 92% (52) of the students said they produced higher quality work when using technology. They said that their work was more organized, and that using technology provided more options and allowed them to be more creative. They also said that using technology allowed them to go into greater detail in their work.

Five teachers were also asked to comment on their perceptions of student achievement when using technology as opposed to when they were not using technology. Responses from teachers were varied, but most teachers felt using technology had a positive impact on student achievement. One teacher said that the students were more creative, another that they have a “higher level of quality”, and one said that when students do written work on the laptops, the speed of production and ease of revision result in higher quality products. One teacher said that while the technology allows students to do larger quantities of research they are still having to stress to students that they need to spend more time “verifying sources and making sure that the data they are getting is good.” Another teacher said that students are “less willing to do the leg work of reading and researching” and that teachers need to “stress the importance of reading and getting background information before diving into the project.”

Teachers were also asked about the types of assessments that they use in class and whether technology has had an impact on student performance on classroom assessments. Most teachers surveyed said that they tend to use more project-based assessments in class and that this fulfills their goal of allowing for differentiation of student products well and that students are more able to demonstrate what they have learned because of the options available to them. One teacher said, “I think student achievement has increased, though it is harder to prove than with a standard summative assessment test. I see a lot more retention of information for later use when the assessment is done through a project, than when they just need to pass a test at the end of a unit.” Another teacher commented, I find that students work harder and more diligently when using technology because they know they have higher standards to meet.”

Other comments included:

- “Technology has definitely changed the way I assess my students. I am able to give them more hands-on projects and do both formative and summative assessment on the project. I also think it has impacted student achievement in that they seem to remember more from the 2008 election projects they did and how

- the election works, versus past years when I've had them read handouts, do worksheets, and refer to their books for the information. They are more actively engaged and achievement has gone up in some projects.”
- “I feel that it [technology] has helped mostly because it keeps everyone more engaged. Looking at test scores it has mostly shown a positive trend. ITBS scores have also gone up.”
 - “I have used technology to differentiate instruction. I use the CPS system to review and to meet the needs of all students. With the CPS, the level of difficulty can vary in order to reach all students.”
 - “They can select different projects throughout the year which require the use of different technologies. Their work is more polished and professional when done using technology.”

4.3 Demonstration of Successful District-to-Vendor Relationships

GCSD experienced an unanticipated problem in their primary district-to-vendor relationship when shortly after the purchase of their Tablet PCs, the Gateway Corporation filed for Chapter 11 Bankruptcy. The district's PCs are no longer covered under warranties and they may experience difficulties with service and parts. They have dealt with the issues as well as they can by doing close monitoring of their computers and by continuing to communicate with their former Gateway representative. They have also established a relationship with eInstruction for assistance in the use of technology in the instructional setting.

4.4 Development of Individual Education Plans for Students

GCSD did not specifically address IEPs in their report.

4.5 Effective Integration of Technology and Teacher Training

In the conclusion to its final report, the GCSD makes the recommendation to future projects that they, “Definitely have professional development before the implementation of the project.” GCSD arrived at this advice by having their pilot team take part in a complete year of professional development before using the Tablet PCs as a means of differentiating instruction in their classrooms. Then, using the train-the-trainer model, their pilot team conducted professional development within their district during early release professional development time. Since GCSD's pilot team consisted of teachers across the curriculum, their inservice training consisted of small study teams who focused on within-curricular area needs, approaches, and software. They also made use of the technical expertise of people from their AEA and within their own district, and have established a strong working relationship with a representative from eInstruction to effectively use student response systems and other instructional technology products and software to enhance student learning.

4.6 Curriculum Development to Establish Successful Research-Based Instructional Methods

The GCSD based their approach to using technology in their schools on several research-based paradigms. Their original grant proposal stated that the purchase of the Tablet PCs for students was part of their five-year plan to move teachers toward more effective differentiation of instruction to better meet their students' individual needs. They also have been using Daggett's research-based Rigor and Relevance framework to structure lessons to increase student engagement, and consequently, student achievement. In addition, during the last year, they have turned their sites toward meeting the requirements of the new Iowa Core Curriculum and using the Authentic Intellectual Work model.

The GCSD is continuing the practice of using the Rigor/Relevance template for lesson planning. They attached several examples of lesson plans to their report (See Appendix A). Each lesson plans asks teachers to show how technology will be used within the scope of that unit.

5. Other Outcomes for Schools

5.1 Use of Computers and Software for Writing, Analysis, Research, and Communication

The GCSD reports that students are using the new computers and software extensively for writing and research. Samples of teacher units submitted along with their report show required usage of the technology for student research, submission of student work created with movie-making software and word processing programs, and blogs and wiki usage for communication.

Students surveyed said that during class time, they use the technology for research and analysis 37% of the time and for writing, 44% of the time. Students were also asked how often they use the Tablet PCs during an average week: 34% said every day, 49% said 1-3 times a week, and 17% said hardly ever. [The report also said that since this survey did not include seniors, it may have underestimated the usage overall because seniors "use them heavily."]

When a sample of teachers were asked how often students used technology in their classes, they said approximately half of the time (53%) and when asked how much their students used Tablet PCs during class time, they said approximately a third (33%) of the time. They also said that they used technology for instruction about half the time (51%) and of that time over half (59%) was using the Tablet PCs. Teachers were also asked to comment on the use of technology in their classes. Their comments were primarily positive, but not exclusively so. One teacher said, "The researching and revising process are more quick and efficient. Work is more professional in appearance". Another teacher said, "They have been able to produce high quality work in settings using technology and for some students I have seen big changes in their work. However, there

are also times I feel like they rush through it to get the ‘project done’ without grasping much of the information.” Another teacher described the learning process for teachers as to how to scaffold students’ learning this way:

The information they get is for the most part good, they just need to spend more time making it accessible by others. This is where I plan on spending more time next year. I spent time showing them lots of different options and tools to use, but not enough on this clarification area. With time, I see it developing.

Three teachers described the ways students have used technology in foreign language, English, and science classes. The foreign language teacher said they used it to do “weather reports, discuss past activities, and to teach others the body parts” and created movies and PowerPoint presentations to teach about culture and customs in other countries that speak the language the students are learning. The English teacher said that students research and then do much of their writing and revising using the Tablets, including using tools of citations and documentation. The science teacher said that students have used the computers to do the research and writing of reports and presentations on drugs and their effects, global warming, planets, and cell biology.

5.2 Movement toward Student-Centered Classrooms

The major tool for documenting the movement toward student-centered classrooms for the GCSO continues to be the Instructional Practices Inventory (IPI). The IPI is a walk-through protocol specifically designed for evaluating the extent to which students are engaged in student-centered activities during classroom time. The IPI is typically completed by building principals, sometimes by principals from other districts. As mentioned earlier, the GCSO conducted the IPI in the fall of 2008 (after the technology was already in use). At that time, they saw some increases in one of the highest levels of student engagement (“Student Active Engaged Learning”) increasing from 5.45% in the Fall of 2007 to 9.38% in the Fall of 2008. However, over the same time-period, they saw a drop in the number of “Student Learning Conversations” from 3.64% to 1.56%. The GCSO interim report included the complete findings of that report. It is recommended that when using the IPI, the district use these findings in conjunction with thorough descriptions of what is happening in the classroom and the ways in which technology are being used. They are also cautioned to remember that given the limited number of IPI visits, small differences in percentages most likely would fail to reach statistical significance, and are unlikely to provide conclusive information about real differences in classroom behavior. The GCSO did not indicate who had conducted their IPI. They had not yet analyzed the findings of their Spring 2009 IPI.

Teachers were also asked about student achievement and student engagement as signs of student-centered classrooms. Most teachers said, they were not yet completely sure about achievement gains, but that students appeared more engaged and interested in learning than they had before. One teacher said, “I saw monumental gains in engagement. For example, teaching about the cell and its parts is a pretty dry and bland topic. But making movies about it brought it to life.” Another teacher said, “I have not noticed a gain in

student achievement, but I have noticed a larger interest in doing assignments. Students enjoy using technology and set higher standards from themselves when it is involved rather than paper and pencil assignments. I am always impressed with the final project.”

Teachers surveyed also seemed to think that as their own comfort level and expertise with technology increase and as students become also more adept at using the software, students will be able to focus their learning more and use technology more effectively. One teacher said (after having students do a project using Google Earth), “They did a much better job the second time around after I showed them an example of what I expect and compared it to their past presentation. They realized some things they could change, and I felt achievement increased on the second one.”

5.3 Disciplinary Issues

The GCSD reported that their disciplinary reports from 2007-08 and 2008-09 do not show differences in disciplinary incidents. Their reports do not differentiate disciplinary problems occurring in classrooms with high or low technology usage. During the middle of the 2008-09 school year, the pilot team reported that they did not feel there was a change in the number of disciplinary problems, with several teachers commenting that there are different kinds of disciplinary problems inherent in the use of technology. For example, one teacher said, “Students can easily get off task when using technology. They perceive using technology as a fun thing to do in class and will often start acting silly or use the technology in ways that it was not intended for.” Several teachers identified their own need to learn ways to combat this new classroom management issue.

Students were asked whether behavior in their classroom was better when their teacher was using technology. Approximately half (52%) said it was, and one-fifth (20%) said it was not, and 28% said they didn’t know or that it was sometimes better. Students were also asked their opinion about whether students behaved better when they themselves were using technology during class. More than half (52%) said “yes”, 12% said “no” and the rest said either that they weren’t sure, or that sometimes students behaved better when using technology.

5.4 Other Outcomes Important to the Project

The GCSD report identified several outcomes important to their particular project:

- Tablet features allow differentiation of student products. In math classes, students are easily able to try several approaches to problem solutions and then choose the mode for solution with which they are most comfortable.
- There is increased opportunity to use technology. Purchase of laptops has made it easier for teachers and students to become comfortable and gain expertise in using the laptops.
- Laptops are in almost daily use in several of the English and math classrooms.
- The pilot team member who is an English teacher has not yet found a way to use the Tablets to differentiate, but does find them valuable for other uses in research and writing.

5.5 Other Outcomes for Educators, Administrators, Parents and Community or Organizations

The GCSO did not collect data concerning parent involvement in the project. The GCSO reports to their School Improvement Advisory Committee concerning technology activities.

6. *Lessons Learned*

The Griswold Community School District provided several lessons learned and recommendations to others doing similar projects. They also wrote about their own goals for the next year and ideas for sustainability as well as suggestions for the ILTC statewide project. Their ideas were as follows:

Lessons learned:

- Learn about software and hardware resources available for different subject areas.
- Diversify professional development to best meet needs of different subject areas.
- Get help with professional development on establishing positive classroom environment and classroom management issues specific to technology use and project-based learning environments.

Recommendations:

- Use the pilot team approach and train-the-trainer model to work with small study groups after the professional development year.
- Make use of outside resources such as AEA tech consultants.
- Do a professional development year before implementing in the classroom. Teachers need to be fully comfortable with technology before using with students.

Goals for their own project for the next year and for the statewide ILTC project

- Locally, they need to work on access issues and on increasing capacity of their infrastructure to support the technology in use.
- ILTC needs to continue to support schools in this way so that schools can keep current with technology integration in instruction.
- ILTC needs to help all schools move toward a 1-to-1 environment.

Sustainability plans:

- During new professional development on the Iowa Core Curriculum (ICC) and Authentic Intellectual Model, they need to continue to work on differentiating instruction with technology use. Use the ICC 21st Century Skills paradigm to guide technology use.
- Form an inclusive committee of administration, staff, board members, students, community members to find ways to progress toward a 1-to-1 environment.

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7. Appendices

7.1 Appendix A: Griswold Community School District Report

[This report was submitted as a PDF file to CEA and is attached to the electronic file as a separate PDF.]