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Abstract

As a major technological change is implemented into a school community, such as a one-to-one laptop learning initiative, it is essential to educate everyone involved in order for it to be successful. In this research project, the Van Meter 1:1 Laptop Learning Initiative Google Site was developed to provide the resources and continued support needed for the change. The digital tools created to be used through the Google site brought knowledge, collaboration, creativity, and connections to the students, teachers, parents, and community at Van Meter. The tools also served as a way for Van Meter to connect to the world and develop valuable relationships with others to support the educational change taking place within the environment.

EDUCATING A SCHOOL COMMUNITY IMPLENTING A
ONE-TO-ONE LAPTOP LEARNING INITIATIVE

A Graduate Research Project

Submitted to the

Division of School Library Studies

Department of Curriculum and Instruction

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts

UNIVERSITY OF NORTHERN IOWA

by

Shannon McClintock Miller

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Titled: Educating a School Community Implementing a One-to-One Laptop Learning
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Date Approved   Graduate Faculty Reader

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Date Approved   Head, Department of Curriculum and Instruction

ABSTRACT

As a major technological change is implemented into a school community, such as a one-to-one laptop learning initiative, it is essential to educate everyone involved in order for it to be successful. In this research project, the *Van Meter 1:1 Laptop Learning Initiative Google Site* was developed to provide the resources and continued support needed for the change. The digital tools created to be used through the Google site brought knowledge, collaboration, creativity, and connections to the students, teachers, parents, and community at Van Meter. The tools also served as a way for Van Meter to connect to the world and develop valuable relationships with others to support the educational change taking place within the environment.

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CHAPTER 1

INTRODUCTION

Today's students are described as digital natives who expect to be connected to technology and information at all times (Pitler, Flynn & Gaddy, 2004; Prensky, 2001). One way of providing this connection is by placing a laptop into the hands of each of these students. When a one-to-one laptop learning initiative is implemented within a school, the transformation into a 21st century learning environment will require a change to take place not only with these digital natives but also their teachers, families, and school community (Pitler, Flynn & Gaddy, 2004). Schools will face challenges such as privacy issues, off-task activities, repair issues, theft, limited internet access at homes, and classroom logistics (Hug & Zucker, 2007; Yang, 2002). Teachers will adapt their classrooms to one-to-one laptop learning environments, and they must also accept the shift to a learner-driven classroom (Donovan, Hartley & Struder, 2007) Zucker (2006) asserts that as a major technology change is implemented into a school community it is necessary to educate everyone involved in order for the change to have a positive impact. Students must embrace the tools that they are given and use them to develop their passions while taking the lead and being responsible learners in a inquiry learning filled environment (Hug & Zucker, 2007). The teacher's role will change from the classroom leader to a facilitator who will guide and learn alongside the students and others in the school environment while utilizing rich professional development opportunities along the way (Yang, 2002). Communication and cooperation between school and homes will also be essential to the implementation process (Campbell, Kratcoski & Swan, 2006).

This research project involved a school environment implementing a one-to-one laptop learning initiative for students in grades 7-12, teachers, parents, and a school

community. The purpose of this research project was to create the *Van Meter 1:1 Laptop Learning Initiative Google Site* which contained digital resources used for educating the various populations involved in this learning initiative. The digital resources included the *Iowa 1:1 Institute, ThinkLeadServe wiki, Van Meter C.E.W.L. Student Group, Van Meter Connect Ning, Van Meter Library Voice blog, Van Meter Library Voice Google site, Van Meter Technology Club Google site, Van Meter Technology Plan wiki, Van Meter Think, Lead, and Serve Google site, Van Meter Twitter, and Van Meter YouTube channels*.

Rationale

The importance of this research project is evident in the growing popularity of one-to-one laptop learning initiatives in school (Donovan, Hartley & Strudler, 2007; Sahl & Windschitl, 2000) Such an initiative can cause notable change for the learners and the school environment as a whole. However, successful implementation of the initiative requires more than just providing a laptop to each student. It also requires the embracement of change, collaboration, communication, and a shift in the way education is delivered and received (Yang, 2002). This research project seeks to identify the best ways to educate students, teachers, families, a school community, and other districts implementing a one-to-one laptop learning initiative within their school environment.

Significance

Adopting a one-to-one laptop learning initiative brings many changes into a school culture. Prior reports of one-to-one laptop learning initiatives have described the implementation approaches used by school districts and successful teaching and learning strategies (Hug & Zucker, 2007; Sahl & Windschitl, 2000; Yang, 2002). Other research has described the benefits and concerns of one-to-one laptop learning initiatives within

school communities (Donovan, Hartley & Strudler, 2007; Fried, 2008; Texas Center for Educational Research, 2007). The results of this project can assist in educating the students, teachers, administrators, parents, and the community about the one-to-one laptop learning initiative that is being put into place within the researcher's school. Other districts may also find this project beneficial and informative as they consider infusing this technology initiative into their school environment. School districts can benefit from the digital tools and resources created and use or replicate them within their own buildings.

Research Questions

The primary research question was what types of resources effectively support implementation of a one-to-one laptop learning initiative? Therefore, the secondary research questions were as follows:

1. What content should be included in digital resources to support a one-to-one laptop learning initiative?

2. What are the most effective tools used in the implementation process of a one-to-one laptop learning initiative program within a school community?

Terminology

Digital natives: Those who "grew up with digital technology" such as computers, the internet, mobile phones, and MP3's from birth (Prensky, 2001).

One-to-one laptop learning initiative: A learning environment where every student and teacher has access to a laptop computer 24 hours a day, 7 days a week as well as educational and digital resources which enhance the school curriculum and the experience of 21st century learning.

School community: Consists of the students, teachers, administrators, parents, and

community involved within the environment of the school.

CHAPTER 2

LITERATURE REVIEW

One-to-one laptop learning initiatives are a fast-growing educational phenomenon creating a transformation of school environments across the world. The popularity of this 21st century learning initiative is intensified by the fact that today's students are thirsty for a constant technology connection which a one-to-one laptop learning initiative can bring to a school environment (Pitler, Flynn & Gaddy, 2004; Prensky, 2001). In order for such an initiative to be successfully embedded it is essential for the entire school community to be educated about the implementation process and one-to-one laptop learning (Zucker, 2006). This research project focused on the implementation process across the entire school environment.

This research project involved a school environment implementing a one-to-one laptop learning initiative for students in grades 7-12, teachers, parents, and a school community. The purpose of this research project was to create the *Van Meter 1:1 Laptop Learning Initiative Google Site* which contains digital resources used for educating the various populations involved in this learning initiative.

Research related to this premise falls into three categories: the importance of technology integrations within schools, the change created when a one-to-one laptop learning initiative is integrated into a school environment, and the theories of change and the effect technological initiatives create within a learning community.

Importance of Technology Integration Within the Walls of Schools

In 2004, the United States Department of Education published a report entitled "Toward a New Golden Age in American Education: How the Internet, the Law, and Today's Students are Revolutionizing Expectations." This report emphasized the need

for our schools to "meet the challenges of an increasing competition in the global economy" by "changing the learning and teaching environment within them" (U.S. Depart. of Ed., 2004, p.6). The report stated, "computers are enclosed in computer rooms rather than being a central part of the learning experience" (U.S. Depart. of Ed., 2004, p. 22). For the students of the 21st century who have been "weaned on the marvels of technology" a radical shift in education through technology needs to take place in order for our students to be successful (U.S. Depart. of Ed., 2004, p. 10). Students, who may be ahead of their teachers in computer literacy, want to be connected to their digital world and become partners with their teachers within an interactive learning environment. In order to create opportunities for technology to improve learning and school environments, school districts are restructuring the organization of the learning environment, reallocating money within the existing budgets, and crafting new teaching models. This revolutionary change has caused "dramatic improvements in student achievement" which has heightened awareness of school environments in the United States as the nation is being viewed as a "nation on the move" in relation to education and technology (U.S. Depart. of Ed., 2004, p. 6-7). According to the U.S. Department of Education (2004), "technology ignites opportunities for learning, engages today's students as active learners and participants in decision making on their own educational future and prepares our nation for the demands of a global society in the 21st century" (p. 46).

The United States Department of Education released the "Enhancing Education Through Technology Act" in 2001 which proposed various purposes and goals for students, teachers, and school community to ensure that technology plays an important part in the education of our young people. The act states that the purposes and goals are

(2001),

> "to provide assistance for the implementation and support of a comprehensive system that effectively uses technology to improve school achievement; to encourage the establishment or expansion of initiatives to increase access to technology; to assist in the acquisition, development, interconnection, implementation, improvement, and maintenance of an effective education infrastructure that expands access to technology for students and teachers; to promote initiatives that provide school teachers and administrators with the capacity to integrate technology effectively into the curriculum through such means as high-quality professional development programs; to enhance the ongoing professional development of teachers by providing constant access to training and updated research in teaching and learning through electronic means; to support the development and utilization of electronic networks and other innovative methods; and to support local efforts using technology to promote parent and family involvement in education and communication among students, parents, teachers, principals, and administrators."

Schools need to focus on these purposes and goals in order to create an environment not only filled with technology, but that can also meet the expectations of the "No Child Left Behind Act" and the young people it affects in the United States (U.S. Depart. of Ed., 2001).

Another report funded by the United States Department of Education entitled "Understanding the No Child Left Behind Act: Technology Integration" confirmed how important it is to improve school achievement through the use of technology, integrate technology into the curriculum, enhance education through technology, and improve students' use of technology (Learning Point Associates, 2007). The Learning Point Associates (2007) report declared "the focus should be on how to improve student learning" and the "planning process should envision ways to connect our students to the world beyond the school". The "Enhancing Education Through Technology Act" (2001) confirmed this in stating as a goal "to assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the

eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability". This goal was developed in partnership with the International Society for Technology in Education (ISTE) and the U.S. Department of Education. In order to achieve this goal, ISTE released a revised edition of the National Educational Technology Standards for Students (NETS-S) in 2007. The new set of standards focus on "creativity and innovation; communication and collaboration; research and information fluency; critical thinking, problem solving, and decision making; digital citizenship; and technology operations and concepts" (Learning Point Associates, 2007; ISTE, 2007).

<div align="center">One-to-One Laptop Learning Initiatives</div>

An environment that could prove to meet the goals, purposes, and expectations of these standards and organizations is one which includes one-to-one laptop learning. A one-to-one laptop learning initiative is defined as a learning environment where every student and teacher has access to a laptop computer as well as educational and digital resources which enhance the school curriculum and the experience of 21st century learning (Zucker, 2006). Dr. Andrew Zucker (2006), a leader in educational technology research and one-to-one laptop learning initiatives, declared in a briefing to the Indiana Educational Technology council "the most powerful learning experience is one that allows students to personalize their own computer, for example by storing their own documents on the device, provides wireless access in schools (and sometimes at home through low-cost internet service providers), and permits students to take the computers home and use them 24/7." School environments which use this implementation are different in that they offer "all students and teachers continuous access to a wide range of software, electronic documents, and other digital resources for teaching and learning,

usually including the internet" (Zucker, 2006).

Zucker acknowledged many benefits for such an initiative including equity among students, "improving teaching and learning, increasing student achievement, preparing students for the future," greater student engagement at school, and students taking on a more self-directed approach to learning with guided independence in their overall educational experience (Zucker, 2006). One of the most important opportunities for students in a one-to-one environment is the opportunity to participate in authentic intellectual experiences. Learning becomes student driven and self-directed which makes the experience more relevant and important. It is also important to provide "adequate technical and instructional support, professional development for teachers and administrators to understand how to use the resources well, and a number of other essential conditions" (Zucker, 2006). Lastly Zucker (2006) confirmed "any education system that implements one-to-one computing should be sure that the program is aligned with the system's important education goals" which would also need to meet such state and national standards as mentioned earlier.

The available research has become more focused (Bennet, 2004; Bielefeldt, 2006; Kratcoski, Swan & Campbell, 2006; Lei & Zhae, 2008; & Lowther, Ross, & Morrison, 2001: Yang, 2002). In a case study, Kratcoski, Swan, and Campbell set out to provide a glimpse at what is possible when "teachers and students have ready access to a variety of digital devices to be used wherever and whenever to support teaching and learning" (2006). The research sought to answer "what kinds of external representations of knowledge do teachers and students employ to support learning when they have access to a variety of digital computing sources and does such access affect student learning and students' attitude and motivation toward learning?" (Kratcoski, Swan & Campbell,

2006). Using an AT & T laboratory classroom on the campus of Kent State University, three case studies illustrated how continuous access to digital technologies changed teaching and learning for teachers and students. Researchers developed four methods for collecting data which included teacher interviews, student interviews, student work sample, and field notes from classroom observations. Findings reported that digital environments provided "more authentic learning experiences that were able to link students to experts and resources that extended beyond their regular classroom curriculum and opportunities for students to create, analyze, synthesize, and share information in new ways, leading to a deep understanding of key concepts, and information" (Kratcoski, Swan & Campbell, 2006). Students of a variety of ability levels became more motivated and engaged by being able to make their learning experiences more personalized. In conclusion, a one-to-one laptop learning initiative can bring new ways for students and teachers to "construct, represent and share knowledge" which is motivating and brings a connectedness among teachers, students, families, the community, and beyond (Kratcoski, Swan & Campbell, 2006).

Lei and Zhao (2008) added "as more and more schools are making decisions about one-to-one computing initiatives, it is essential that policymakers, educators, and practitioners alike understand the role of one-to-one computing on student learning and the impact of one-to-one computing on school environment" (p. 99). In their study, they specifically asked "How did students use their laptops? What impact did the one-to-one laptop program have on student learning and the school culture? What were the perceptions of and concerns over one-to-one computing?" (Lei & Zhao, 2008, p. 97). The researchers collected data from surveys of 28 teachers and 44 parents in a northwestern middle school throughout one school year. They also individually interviewed nine

teachers and nine students to obtain "in-depth stories on how technology was used, for what purpose(s), and in what context" (Lei & Zhao, 2008, p.105).

The authors identified from the interviews and surveys several findings of how students used the laptops which included learning purposes; communication tools between their teachers and classmates; as a form of expression in writing, publishing and creating project and websites; and for exploration of new products including games, music, videos, and streaming media to expand their universe outside of the school walls (Lei & Zhao, 2008). They noted various impacts and changes within school such as increased student technology proficiency and academic success; increased parental involvement in working with their children on homework and computers; and consistent and convenient communication between teachers, students, and parents which lead to "more equal opportunities" for those involved in the school community (Lei & Zhao, 2008, p.114). Lastly, the research findings showed that the perceptions of one-to-one computing was positive overall. Most students described the laptops as important to them and their learning; most parents were pleased with their children's involvement in the initiative; and almost all the teachers were optimistic about the initiative and believed that it was very important to students and teachers for increasing communication between themselves, students, and parents (Lei & Zhao, 2008). The major concern communicated by teachers and parents about the "uncertainty and complexity of the impact of one-to-one computing, especially at the early stage of the implementation" (Lei & Zhao, 2008). Lei and Zhao (2008) pointed out that "school administrators need to address these concerns, and provide opportunities to bring teachers, students, and parents together to discuss these issues, exchange their experiences and ideas, and resolve these issues through open communication" (p. 118).

Dr. Harry Bennett, a researcher from the American School of Bombay, became involved in studying the implementation of one-to-one laptop learning initiatives when the American School of Bombay set out to create an environment filled with technology that would serve the future needs of the students. The "Anytime Anywhere Learning" approach used laptop computers and made it a goal "to equip students with the knowledge and ability to function successfully in a rapidly accelerating technology environment by enhancing each students' learning experience when integrating laptop technology into the curriculum" (Bennett, 2004, p.5). Bennett (2004) stated "we looked for ways to optimize students enthusiasm and channel their natural curiosity into understanding and learning new technology" (p.5). They empowered the students by giving them a "more active role in the learning process" one which they didn't have in the past. By adopting this initiative, the school saw a shift in the classroom roles as students and teachers learned together through collaboration and empowerment. Students may be "organized as teachers and helpers with their classmates" (Bennett, 2004, p.5). They will be directly involved and responsible for the design, implementation and success of this 21st century learning initiative within their school.

Bennett also emphasized that staff training was essential in the deployment of a one-to-one laptop learning initiative. Staff training needed to focus on the areas of "management, software applications, and integration of technology into existing units" (Bennett, 2004, p.3). In the area of management staff needed to learn to teach with the laptop, how to keep learners focused and engaged, about the effectiveness of classroom environment, and trouble shooting problems. Software applications and integration of technology was essential by teaching staff the most effective ways of using the laptops in the existing curriculum, giving specific examples and applications to integrate into the

curriculum, and gaining experience and ideas from collaboration and co-teaching (Bennett, 2004). It was also extremely important to emphasize the strategy that the curriculum would drive the technology by using the standards, goals and benchmarks which were in place in the existing curriculum.

Lastly, Bennet (2004) stated that support from parents and students was important in the implementation process. Communication between parents, students, and the school needed to start at the beginning of the one-to-one laptop learning initiative process. Communication followed various forms such as letters, surveys, newsletters, forms, agreements, and other forms as appropriate. Meetings including everyone involved within the school environment outlined specific objectives and convey important information throughout the process. Special presentations provided ongoing educational opportunities and connectiveness between school and homes (Bennet, 2004).

A study by Bielefeldt suggested that there are various strategies that will assist schools in a successful transformation of the environment when implementing a one-to-one laptop learning initiative. With changing attitudes, types of learning activities and relationships between school and the community, these strategies are important and essential (Bielefeldt, 2006, p.1). Bielefeldt's (2006) central research question was "what educational pressures drive the current interest in high-access computing" (p. 2)? He used a survey approach and collected data from teachers and students. Bielefeldt (2006) reported "educators look to one-to-one programs to provide resources to students, motivate students, and as a result, improve outcomes" (p. 2). Schools also strive for improvement in teacher and student relationships, student attitudes toward school, parent attitudes toward school and an increase in student achievement. Through review of recent

studies, Bielefeldt concluded that even though there are advantages, "the use of new technology does not necessarily result in improved outcomes. The effects on teaching and learning depend on integration with curriculum and instruction" (2006, p.3). In conclusion, Bielefeldt reported that it is important to both teachers and students to have accessible use of technology, a connection to network resources and community resources and software that will support the existing curriculum.

Lowther, Ross, and Morrison (2001) set out to determine the effectiveness of providing laptops to 5th and 6th graders at Walled Lake Consolidated Schools in Tennessee. They explored the effectiveness of providing laptop computers with "regard to classroom learning activities, technology usage, and writing achievement" (p.3). The researchers developed their research around three central questions which concentrated on the areas of classroom practices, student behavior, and writing ability. The central research questions asked were; "Is teaching different in a laptop classroom?, Do students behave different in a laptop classroom?, and Do students achieve differently in a laptop classroom?"(Lowther, Ross and Morrison, 2001, p.3). They gathered quantitative and qualitative from students, teachers, and parents involved with the laptop program and students and teachers in non-laptop classrooms within seven schools throughout the WLCS District to use in the evaluation design of their research. The researchers conducted comparative analyses for various learning outcomes and teaching activities. They also completed descriptive analyses for teacher, student, and parent reactions to the one-to-one laptop learning initiative (Lowther, Ross and Morrison, 2001, p. 4). "Classroom observations, student writing test scores, student surveys and focus groups, teacher surveys and interviews, and parent surveys and interviews" were used as data sets for the evaluations (Lowther, Ross and Morrison, 2001, p.4). The surveys and interviews

for the involved populations focused on the four areas of personal impact, classroom impact and benefits, difficulties, and recommendations for the program.

The researchers unveiled numerous points through the interviews and surveys. Students indicated that the laptops had increased their computer and Internet research skills, assisted with assignments, helped them become more organized, and strengthened the relationship between them and their parents. They stated that it was hard to keep track of their laptop to and from school. Teachers reported that the laptops placed an emphasis on higher-order learning in the classroom, increased project based learning, and assisted in the preparation of technology enriched lessons for their students. Teachers indicated "students produce higher quality work and had more self-confidence, greater enthusiasm, increased depth of knowledge, and were more engaged with other learners" (Lowther, Ross and Morrison, 2001, p.8). The role of the teacher shifted to that of a facilitator for learning and students were using self-assessment frequently which led to fewer missed assignments and overall improvement of grades. The only concerns of teachers were technical such as printer and server issues. Lastly, parents revealed that the one-to-one laptop learning initiative strengthened their children's knowledge of computer literacy, increased interest in school, and they enjoyed seeing the quality of project-type school work improve. Parents did state concerns that is was difficult for their children to keep track of the laptops and make sure they got everything to school everyday. Lowther, Ross, and Morrison (2001) also reported "parents felt that more training is needed for teachers, parents, and students" (p.8). As a result of the findings Lowther, Ross, and Morrison (2001) concluded that "Laptop students are much more fluent that other students with using the technology of the 21st century for learning, research, and production. For them, computers are fully integrated with and a natural part of their

educational experiences both at school and at home" (p.10).

Yang confirmed the research of others by conducting a qualitative case study which identified the most effective strategies of a middle school science teacher in implementing a one-to-one laptop learning initiative into the classroom. Interviews and observations served as sources of qualitative data. He asked the science teacher to give suggestions in an end-of-year interview. The interview text was analyzed and themes were identified. Yang also collected data from "field observations and used descriptive statistics to include the frequency of activities which occurred in the learning environment and activity structure" (Yang, 2002, p.4). Yang's case study revealed interesting outcomes. The science teacher used several strategies for implementing the laptops which included "problem-based learning, project-based learning, collaborative learning, and hands-on activities," and as a "cognitive tool" (Yang, 2002, p.4). Yang also observed that the role of the teacher changed from "that of a lecturer and transmitter of knowledge to that of a facilitator, guiding students to take advantage of opportunities to develop their inquiry skills; from being a conclusion-drawer to becoming a curriculum planner and initiator" (Yang, 2002, p.4). One of the most interesting conclusions from the teacher interview was that teachers needed more time to find new ideas and collaborate with others working in the same type of environment. Yang (2002) believed "curriculum support or a formal channel to share instructional ideas" needs to be provided. This could be someone who could share "ready to use activities as resources for teachers to adapt" or an "official website for sharing valuable resources that can provide teachers a channel to have access to all kinds of tools for specific units" (p.5). Yang, among the other researchers, found the need for support in educating the key players when a change in the learning environment takes place within a school extremely important and essential.

On the other hand, studies have also shown one-to-one laptop learning initiatives to not hold such a favorable impact within the school community (Texas Center for Educational Research, 2007; Fried, 2008). One of the most comprehensive ongoing one-to-one laptop implementation projects is the Technology Immersion Pilot (TIP) sponsored by the Texas Education Agency (TEA). The second-year implementation report stated "the overarching purpose of the study is to scientifically investigate the effectiveness of technology immersion in increasing middle school students' achievement in core academic subjects as measured by the Texas Assessment of Knowledge and Skills (TAKS)" and to "examine relationships that exist among contextual conditions, technology immersion, intervening factors, and academic achievement" (Texas Center for Educational Research, 2007). The report contained a combination of qualitative and quantitative data through interviews and surveys. Researchers visited the 21 immersion and 21 control schools within the Technology Immersion Pilot program to conduct "interviews with principals, technology coordinators, central administrators, and focus groups with a sample of sixth- and seventh-grade teachers and students" and administered surveys to all teachers and students (Texas Center for Educational Research, 2007). From the scores that were gathered from the interviews and surveys five immersion support components were identified including "leadership, teacher support, parent and community support, technical support, and professional development". Two teacher and student immersion components were also identified as classroom immersion and student access and use (Texas Center for Educational Research, 2007).

Although many of findings have been favorable, some concerns with the implementation of the laptop program arose. Researchers found that most of the schools did not implement all seven of the immersion components successfully and the progress

at some schools was hindered "by financial challenges in providing laptops for every

student, parent refusals of laptops, administrator and teacher turnover, competing reform

initiatives, Internet safety issues, and loss of teacher buy-in" (Texas Center for

Educational Research, 2007). The study also concluded the necessity for technology

immersion. This was attributed to turnover in administration and the suggestion that some

principals and superintendents did not have a "clear direction for immersion and help

with building the capacities of their staff" (Texas Center for Educational Research, 2007).

Although teachers used the new technologies to keep records, present content, and

develop lessons, a small percentage of them used the laptops for communication between

themselves, students, and parents. The report also stated "few teachers used school or

class websites to manage information" (Texas Center for Educational Research, 2007).

From the surveys and interviews, the researchers found teachers often felt the laptop

program brought more challenges than benefits to their classrooms. Teachers were

concerned about the time it took to "prepare laptop-related lessons, making arrangements

for students without laptops, handling technical problems, and monitoring students'

appropriate laptop use" (Texas Center for Education Research, 2007).

Fried (2008) stated "more and more teachers are banning laptops from their

classrooms because of perceptions that they distract students and detract from learning"

(p. 906). Although most research has pointed to the success of one-to-one laptop learning

initiatives, Fried found a need to look at the attendance, laptop use, and environment of

the classroom in schools that had adopted such initiatives. His primary research questions

were: "what is the level and character of laptop use in the classroom; how does laptop use

affect learning outcomes; and do laptops present a sizable distraction to other students in

the classroom" (Fried, 2008, p. 908). Through online weekly surveys, 137 students

answered questions which focused on class attendance, classroom experiences,

and laptop use. Fried raised numerous concerns. The surveys showed that students were

spending too much time doing other things on their computers rather than taking notes or

working on projects and homework. This suggested that "laptop use interfered with

students' abilities to pay attention to and understand the lecture material, which in turn

resulted in lower test scores" (Fried, 2008, p. 911). Fried (2008) declared "I believe

students, faculty, and administrators need to find ways to promote the appropriate use of

laptops while simultaneously reducing the negative impacts of inappropriate use"

(p. 912).

<p align="center">Theory of Change and the Effects it Has on a Learning Community</p>

It is important to look at the theory of change and how a technology integration

such as a one-to-one laptop learning initiative can affect a school community. One

theory that could be relevant for such a change is the Concerns-Based Adoption Model or

CBAM. Donovan, Hartley, and Strudler acknowledged that (2007), "the CBAM is a

change model in which relationships between users and the resource system of an

innovation can be examined" (p. 267). In a technology innovation the Concerns-Based

Adoption Model applies to policy makers, teachers, students, and other involved that are

experiencing a change in the environment based on this innovation. Loucks-Horseley

suggested that individuals experiencing change will and should ask questions that

evolve through stages of concerns and innovation. She acknowledged that teachers,

administrators, students, parents, school board members, and others have concerns when

any change is implemented into a school environment. However, by acknowledging and

addressing the concerns of change one is making beneficial progress in a positive reform

effect (Loucks-Horseley, 2003).

Donavan, Harley and Strudler (2007) confirmed the importance of this change model in a study surrounding the concerns among teachers in a school where a one-to-one laptop initiative was implemented. The problem addressed in their study was to determine teacher concerns during this implementation process. They utilized three diagnostic tools of the Concerns-Based Adoption Model as the research framework as they evaluated the concerns of teachers in the early stages of participating in the technology implementation. Informal interviews, open-ended concerns statement, and stages of concerns questionnaires were given to teachers in an urban middle school in the southwestern United States. Findings revealed that teachers' biggest concern was the "impact the introduction of laptops has on them as an individual in such that they are concerned how it may impact their time, planning and instructional practices" among other smaller concerns such as the "best use of the laptops to promote learning, routines, and teacher effectiveness and how to collaborate with others about the program" (Donavan, Harley & Strudler, 2007). From their research, three recommendations emerge for schools implementing any innovation with a school community:

- within the school there is "alignment of professional development,
- teacher concerns, teachers are given a voice in innovation adoption, and
- there is an understanding that change is a process" (p. 278-79).

Other research illustrated that there would be a change in the organization of the learning environment when any technology change was introduced. In a qualitative study, Hsu and Sharma (2008) studied how a technology integration would change a school environment. The purpose of their study was to "analyze enabling factors in the technology integration change process in a multi-section elementary science methods course, SCIED 408 from 1997 to 2003, the time this study was conducted, from the

perspective of change agents" (p. 213). They described change agents as "solution givers, process helpers and resource linkers" therefore in this study the change agents are "faculty members and course instructors who initiated and led the technology integration change process" (p. 213). They used a systems theory approach for collecting data. In this approach they examined various factors and relationships that assisted in the implementation of the technology integration change process during the five year period. Through this research, three key components were identified with being associated with systemic change. These components were "shared leadership, learning community, and education systems" (p. 214). Hsu and Sharma also used a case study research design by collecting data through two in-depth interviews and the review of documents ranging from presentation papers, syllabi, and class internet resources from seven people who had played or were currently playing the role of change agents. Findings revealed that leaders possessed a number of traits including "strong expertise, skillful deployment of change strategies, and a shared vision" to successfully lead change in a technology integration change process (p. 218).

They also reported that when these change agents came together as a learning community it could create a powerful team in the technology integration change process. According to Peter Senge (2006) "a learning organization or community is where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together" (p. 3). As reported by Hsu and Sharma (2008), the creation of such communities led to "collaboration, inquiry, parity, reflective dialogue and shared vision" that assisted with the successful implementation of technology integration (p. 224).

In another study, Hew and Brush (2007) identified the problem of using strategies for changing the attitudes and beliefs of a learning community where a technology integration was taking place. They described technology integration as "the use of computing devices such as desktops computers, laptops, handheld computers, software or internet in K-12 schools for instructional purposes" (p. 225). Hew and Brush (2007) examined the current barriers and strategies in studies dated from "1995 to 2006 that reported empirical research findings" (p. 225). They used the constant comparative method to find 123 barriers and various strategies to overcome each barrier. Findings reported that one of the largest barriers was "subject culture" or a "general set of institutionalized practices and expectations which have grown up around a particular school subjects" and teachers are "reluctant to adopt a technology that seems incompatible with the norms of a subject culture" (Hew & Brush, 2007, p. 231). The study identified several strategies to overcome that barrier including, "creating a shared vision and technology integration plan, facilitating attitude change and facilitating teacher knowledge and skills" throughout the learning community (Hew & Brush, 2007, p. 240).

<div align="center">Summary</div>

The popularity of school districts adopting a one-to-one laptop learning initiative is growing and causing a transformation within schools (Donovan, Hartley, and Strudler, 2007; Sahl & Windschitl, 2000). According to the U.S. Department of Education (2004), "as these trends develop and expand over the next decade, facilitated and supported by our ongoing investment in educational technology, and led by the drive, imagination and dedication of a reenergized educational community at every level, we may be well on our way to a new golden age in American education" (p. 7-8). The research analyzed in this review found that schools need to be proactive in arming our students with the skills and knowledge in technology for success in today's world (U.S. Department of

Ed., 2004).

The Concerns-Based Adaptation Model supports the theory behind the type of change that will take place within the learning community of a school district. Use of time spent teaching, planning and instructing students shifts. Research has shown that teachers are concerned how a one-to-one laptop learning initiative will "impact their time in planning and instructional processes" therefore support through professional development and additional resources is necessary to make the transition smoother (Donavan, Harley, & Strudler, 2007). Along with changes in teaching and learning also comes a shift in the organization of the learning environment. Members of the school community come together with a shared vision while using their expertise and skills to ensure that the technology integration is successful (Hsu & Sharma, 2008). Hsu and Sharma stated (2008) that such a learning community will bring "collaboration, reflective dialogue, and inquiry" to the school community and strengthen the implementation process and all populations involved (p. 224).

The studies cited indicate that a one-to-one laptop learning initiative has the potential to enhance the school curriculum and lead to a positive change within the classroom and relationships between students, teachers, parents, and the entire school community. While some implementations have been successful, some have not. In order for a one-to-one initiative to be successful teachers, parents and students must be informed about the implementation process (Fried, 2008; Zucker, 2006). Although research indicated that parents need to be educated about such a program, the current research provided no examples of ways to educate parents. Additional tools and resources may assist school communities in the successful implementation of a one-to-one laptop learning initiative. These resources would create smoother transitions, enriched educational opportunities, and a stronger connection between teachers, students, parents, and others involved in the implementation process.

CHAPTER 3

METHODOLOGY

It is essential to provide educational opportunities and tools to a school

community implementing a technology change (Zucker, 2006). The purpose of this

research project was to create digital resources for educating and supporting the various

populations involved in a one-to-one laptop learning initiative. These resources served to

benefit the school community relevant to this study and other school districts who were

looking to implement a one-to-one laptop program of their own.

The Concerns-Based Adoption Model or CBAM, groups involved in a change

will develop questions that evolve through stages of concerns and innovation (Loucks-

Horseley, 2003). According to the National Academy of Sciences (2007) the seven stages

of the concerns a group will experience were (Table 1):

6	Refocusing	I have some ideas about something that would work even better.
5	Collaboration	How can I relate what I am doing to what others are doing?
4	Consequence	How is my use affecting learners? How can I refine it to have more impact?
3	Management	I seem to be spending all my time getting materials ready.
2	Personal	How will using it affect me?
1	Informational	I would like to know more about it.
0	Awareness	I am not concerned about it.

Table 1. Seven Stages of Concerns-Based Adaptation Model (CBAM)

Therefore, teachers, students, and the community will need resources to answer these questions and support them through each of these stages and in the implementation process. The creation of the digital resources in this research project supported the school community as the laptops were deployed. Hsu and Sharma (2008) stated that leaders in technology integration who possess a "strong expertise and a shared vision" are also essential within environments undergoing change. Van Meter Community School came together as a learning community to create a strong team as the one-to-one laptop learning initiative was implemented. The researcher served as one of the leaders and created resources to support the change.

<div align="center">Description</div>

A variety of digital resources and materials were created for this project to serve everyone in the school community and others interested in a one-to-one laptop learning initiative program. The Van Meter 1:1 Laptop Learning Initiative Google *Site* (https://sites.google.com/a/vmbulldogs.com/van-meter-1-1-laptop-learning-initiative/home) was developed to host digital resources used for educating the various populations involved in this learning initiative. The digital resources include the *ThinkLeadServe wiki, Van Meter C.E.W.L. student group information, Van Meter Connect Ning, Van Meter Library Voice blog, Van Meter Library Voice Google Site, Van Meter Technology Club Google Site, Van Meter Technology Plan Wiki, Van Meter Think, Lead, and Serve Google Site, Van Meter YouTube Channels, Van Meter Twitter,* and *Iowa 1:1 Institute.*

<div align="center">Audience</div>

This project was created for the Van Meter Community School District. The information was important for everyone in the school community including

administrators, teachers, students, parents, and others throughout the community of Van Meter. Students and teachers in grades 7 through 12 were included in the implementation program, and they benefited firsthand from this project.

Tools

Google applications (Google Sites and Google Documents), various web 2.0 tools, and Apple iLife and iWorks software were used to create the resources for this project. iLife includes iPhoto, a tool for creating slideshows and storing, organizing and editing photos. iLife also includes GarageBand which was used for creating podcasts and other resources. iMovie, another component in iLife, was used for a variety of purposes including documenting the implementation of the laptops at Van Meter Community School, Internet safety information, curriculum support, technical support, and many other educational and support tools. The iWorks software included Keynote to create visual presentations and Pages to create documents, flyers, newsletters, and letters. As these resources were created, they were placed on the Van Meter 1:1 Laptop Learning Initiative Google site, which was accessible to all students, teachers, parents, community members, and others interested in the program.

Limitations

The researcher served as the district teacher librarian and technology coordinator at Van Meter Community School in Van Meter, Iowa. She was highly involved with the one-to-one laptop learning initiative from the start by visiting schools who had implemented such a program, attending administrative and weekly Apple Education meetings, meeting with Apple sales representatives and TC Network support, and sharing her knowledge with other teachers, students, and parents. She also served on the Van

Meter Educational Foundation and School Improvement Advisory Committee where one of her roles as the teacher librarian and technology coordinator was to serve as the school liaison and communicate important information about such programs. As the National Honor Sponsor at Van Meter, the researcher secured the chapter's role in this project by assisting with the roll out, implementation, and technical support within the school by having the members become active participants in these tasks.

Because this project occurred at the school where the researcher was employed, she took on the role of participant observer. As such, she interacted with the project at the same time as she observed the implementation of this innovation in the school. This perspective afforded opportunity for intensive observation of the implementation of the laptop program. The researcher communicated to all participants that she observed the processes of the implementation for the purposes of this *research project.*

<p style="text-align:center">Procedures</p>

The creation of the one-to-one laptop learning initiative program resources proceeded with the following steps:

1. The researcher sought Institutional Review Board approval through the University of Northern Iowa process prior to proceeding with the project.

2. The researcher sought consent for project participants to be included in production. See Appendix A for Electronic Display Document Consent Form, which was sent electronically to all Van Meter Community School staff involved in the implementation process. See Appendix B for the Document Consent Form which was sent in the August 2009 Van Meter Community School Bulldog Brief. This newsletter was sent to all community members potentially involved in the

implementation process. See Appendix C for the Van Meter Community School

Release of Student Information-Directory Information policy included in the

student handbook. This policy granted the researcher permission to use

photographs, videos, and other similar information of all Van Meter students for

the purpose of this research project. The researcher placed a copy of all releases

on file in the School Library Studies office at the University of Northern Iowa.

3. The researcher documented the implementation process by videotaping and

photographing the following events and activities within the Van Meter

Community School District:

    a. Apple Education teacher training on June 8 and 9, 2009

    b. Roll-Out Night on August 17, 2009

    c. Teachers classrooms, working, and collaboration

    d. Students working and collaboration

    e. Examples of student and teacher work

    f. Technology team meetings

    g. Technology Club meetings

    h. C.E.W.L. meetings and work

4. As the implementation of the one-to-one laptop learning initiative was

documented, the researcher created the following digital products to provide support for

the successful implementation of the laptop program:

    a. *The ThinkLeadServe Wiki* contained Van Meter student work, teacher

        information; important documents used in the one-to-one

        implementation process within Van Meter; a page to connect with

others around the world through a Twitter shout out; and technology

support. The front page of the ThinkLeadServe wiki is shown in

Figure 1.
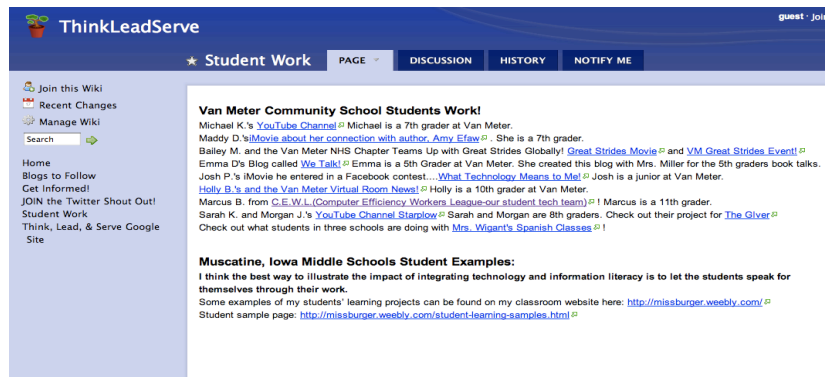
Figure 1. *ThinkLeadServe Wiki*

b. The Van Meter C.E.W.L. student group was developed to support the

teachers and students with the implementation of the new technology.

The C.E.W.L. members created websites, blogs, iMovies, and other

resources using web 2.0 tools to support Van Meter and others.

The Google site entitled *VM Tech News* was created by a Van Meter

11th grader to support and enrich the technology within Van Meter

School. The *VM Tech News Google Site* was also a place for

C.E.W.L. to announce special technology opportunities in Van Meter

and Iowa. Another Van Meter 11th grader, created the C.E.W.L. Prezi

to explain the group's functions. He chose to use the web 2.0 tool

Prezi because of its highly interactive and creative features of the free

online tool. A Van Meter 7th grader created a blog entitled *Mike's*

Tech News to discuss various technologies, news in technology, and

showcase student work at Van Meter. The *Van Meter C.E.W.L.*
Student Group Page within the *Van Meter 1:1 Laptop Learning*
Initiative Google Site is shown in Figure 2.
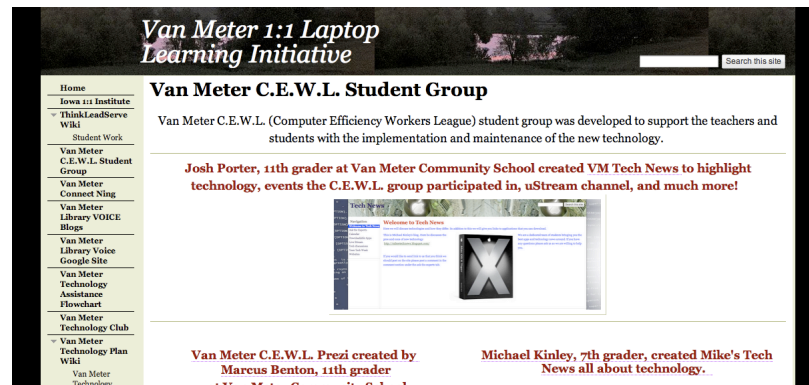
Figure 2. *Van Meter C.E.W.L. Student Group Page*

c. *Van Meter Connect Ning* was created to connect teachers, students,
parents, community members, and others around the world interesting
in integrating technology into teaching and learning. Within the Ning,
the researcher created six groups including Teacher Librarians, 1:1
Laptop Learning Initiative Van Meter VR (Virtual Reality), Special
Education Bulldog Pit, What's Up in Your Classroom, and Web 2.0
Resources. This is a place for Van Meter students, teachers, parents,
community members, and others to collaborate, connect, and share
ideas. Figure 3 shows the 1:1 Laptop Initiative Group within the *Van*
Meter Connect Ning.

Figure 3. *Van Meter Connect Ning: 1:1 Laptop Initiative Group Page*

d.   As shown in Figure 4, the researcher created the *Van Meter Library*

Voice Blog to support the one-to-one laptop learning initiative by

showcasing student work; highlighting web 2.0 tools and other

technologies; to support special events within the community, nation,

and world; and to encourage all types of connecting, learning, and

teaching.

Figure 4. *Van Meter Library Voice Blog*

e.   *The Van Meter Library Voice Google Site* shown in Figure 5 was

created by the researcher to serve as the central place for online

resources, digital citizenship information, teacher and student

resources, Iowa AEA Online resources, library information and

materials including the Destiny online library catalog for the Van

Meter Community School District collections, book and author

resources, staff information, teacher resources, and award book news.

The Van Meter Library Voice Google Site gave patrons a way to

connect through the *Van Meter Voice Blog, Van Meter Voice*

Facebook page, Van Meter Librarian YouTube Channel, Van Meter

Librarian Twitter, and *Van Meter Librarian Posterous* account.
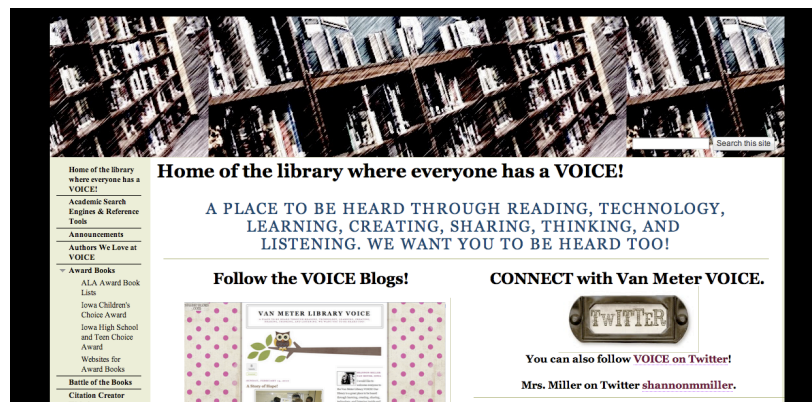
Figure 5. *Van Meter Library Voice Google Site*

f.   The student Van Meter Technology Club created the *VM Tech Club*

Google Site to highlight special technology events and contests. The

front page of the site is shown in Figure 6.

Figure 6. *Van Meter Tech Club Google Site*

g. As shown in Figure 7, the *Van Meter Technology Assistance Flowchart*

answered two questions: how I can use technology and how I can fix

technology? The flowchart was given to all staff and students in print

format and placed on the desktop image of all MacBooks.

Figure 7. *Van Meter School Flowchart for Technology Assistance*

h. *The Van Meter Technology Plan Wiki* was created by the 2009-2010

technology committee to hold important documents and information

which supports the one-to-one laptop learning initiative within the

school. The technology committee consisted of Jen Sigrist, director of

teaching and learning; Mike Linde, director of technology; and

Shannon Miller, district teacher librarian and technology coordinator.

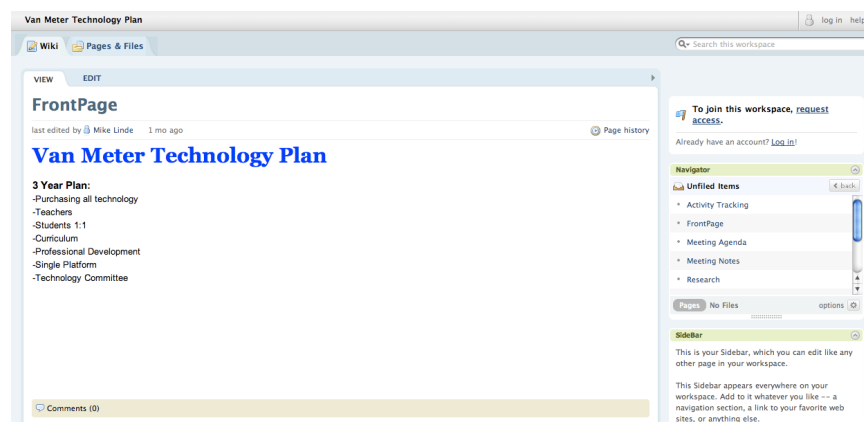The front page of the *Van Meter Technology Plan Wiki* is shown in

Figure 8.

Figure 8. *Van Meter Technology Plan Wiki*

i.   As shown in Figure 9, the *Van Meter Think, Lead, and Serve Google

Site* was created to highlight a variety of resources for the district

technology initiative. The Parent Information page was created to use

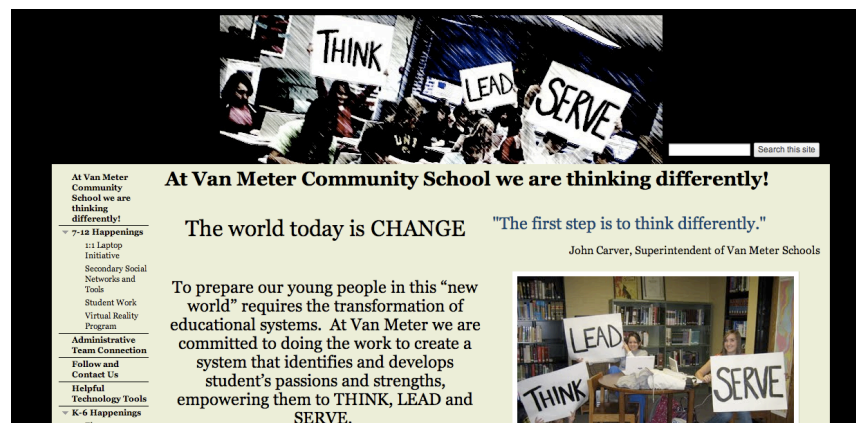in workshops and as support for parents and the community.

Figure 9. *Van Meter Think, Lead, and Serve Google Site*

j. Two Van Meter YouTube channels were created to showcase and
    share resources that were produced due to the laptop initiative. *Van
    Meter Bulldogs YouTube Channel* shown in Figure 10 was created to
    hold videos from teachers, students, and others associated with the
    school and education. The *Van Meter Librarian YouTube Channel*
    shown in Figure 11 held videos created by the librarian, teachers, and
    students at Van Meter Community School. Both of the channels also
    contained videos from the Dallas County News in Adel, Iowa and the
    Iowa State University Castle Program featuring Van Meter
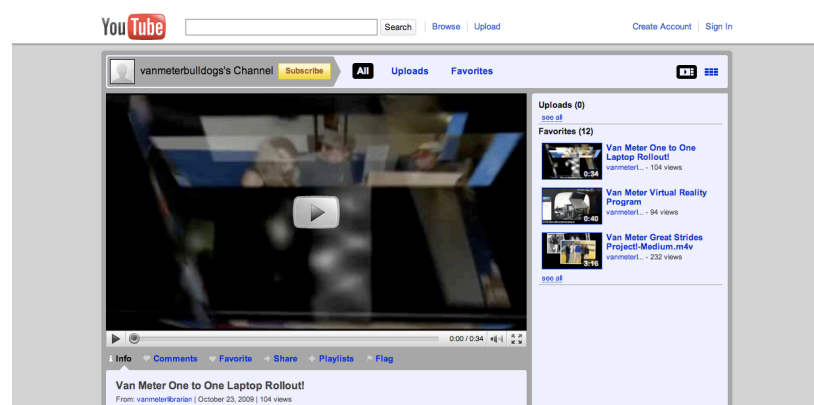   Community School District.
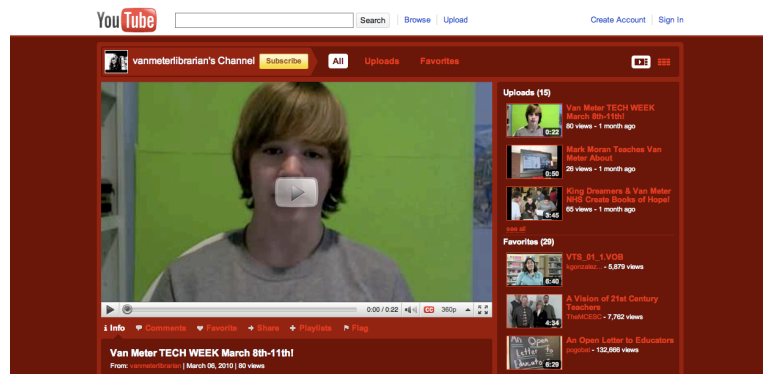

Figure 10. *Van Meter Bulldogs YouTube Channel*

Figure 11. *Van Meter Librarian YouTube Channel*

k. The Van Meter Twitter hashtag and usernames were created to
collaborate and connect with a global audience to support the one-to-
one laptop learning initiative. The *Van Meter Twitter Page* within the
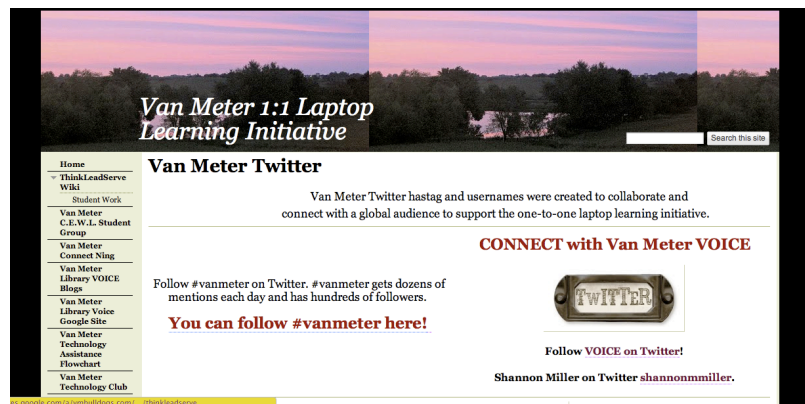*Van Meter 1:1 Laptop Learning Initiative Google Site* is shown in
Figure 12.

Figure 12. *Van Meter Twitter Page*

l. Iowa 1:1 Institute was held on April 7, 2010 at the Polk County
Convention Center in Des Moines, Iowa. The Iowa 1:1 Institute page
within the *Van Meter 1:1 Laptop Learning Initiative Google Site*
contains the materials that the researcher used in the presentation

entitled *Be the Change You Want to See in Schools: Integrating Technology and Making Connections to Create Change.* This is included in the website to share with conference participates and others interested in the teacher librarian and students role in such an initiative. Also, by being linked to the *Van Meter 1:1 Laptop Learning Initiative Site* the additional resources will be easily available to the Van Meter school community and others. The *Iowa 1:1 Institute Page* within the *Van Meter 1:1 Laptop Learning Initiative Google Site* is shown in Figure 13.
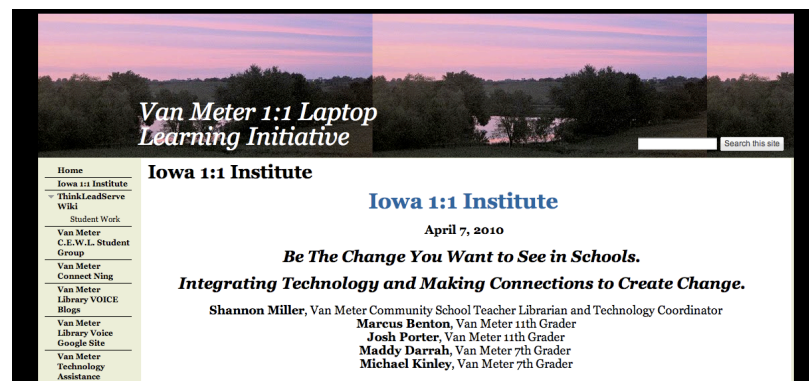

Figure 13. *Iowa 1:1 Institute Page*

m. As these digital resources were developed, the researcher placed them onto the *Van Meter 1:1 Laptop Learning Initiative Google Site* as shown in Figure 14. This was a central place for the school community of Van Meter and other school districts to obtain information about the laptop program. This was also a place for teachers and students to collaborate and share work created within the school. Also, parents could stay connected to teachers and their children using this resource.
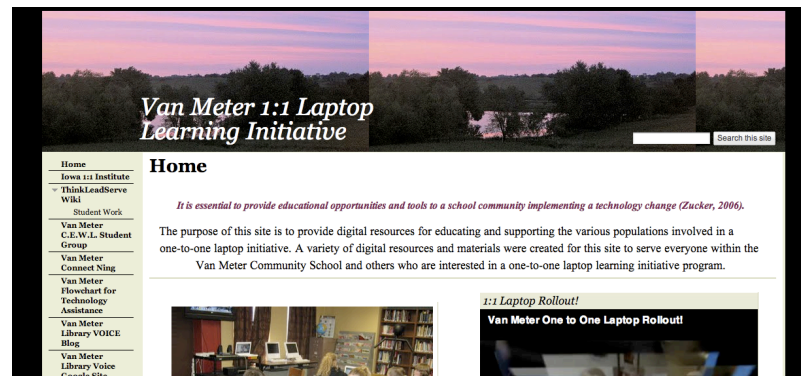
Figure 14. *Van Meter 1:1 Laptop Learning Initiative Google Site*

The digital resources created in this research project were useful in the implementation of one-to-one laptop learning initiatives within the researchers' school and other schools who are implementing this type of learning environment. The members of any school community integrating a technology change into their existing environment need education and support to ensure the success of such a program (Fried, 2008; Lowther, Ross, and Morrison, 2001; Yang, 2002). Yang (2002) confirmed there is a need for a "formal channel to share instructional ideas" such as an "official website for sharing valuable resources" (p. 5). This research project resulted in tools to educate students, teachers, families, a school community, and other districts implementing a one-to-one laptop learning initiative.

CHAPTER 4

RESEARCH PROJECT

The research project created was the *Van Meter 1:1 Laptop Learning Initiative Google Site* at https://sites.google.com/a/vmbulldogs.com/van-meter-1-1-laptop-learning-initiative/. The researcher brought together all of the resources created over the course of the first year of the one-to-one laptop learning initiative at Van Meter Community School to create this site. The site contained the following digital resources to educate and support the various populations involved in a one-to-one laptop learning initiative.

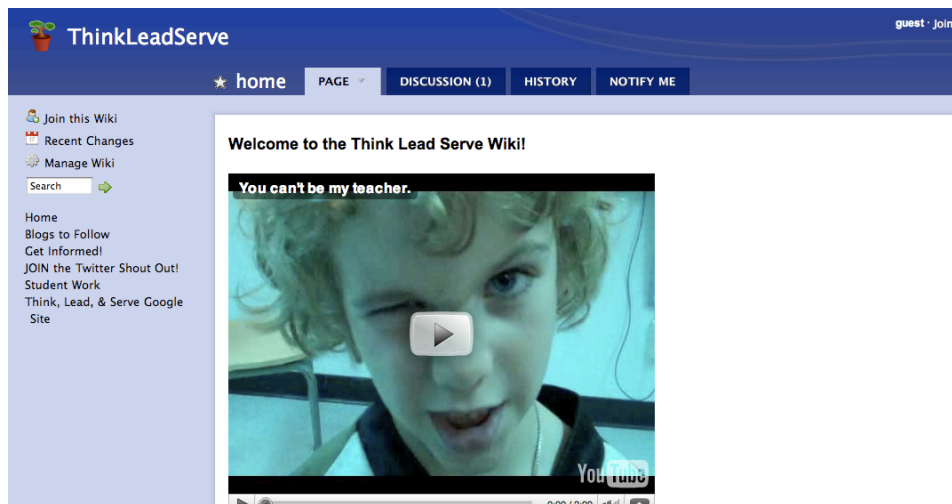Educating the Van Meter Community

ThinkLeadServe Wiki

Figure 15. *ThinkLeadServe Wiki*

The Van Meter *ThinkLeadServe Wiki* (Figure 15) was created to support Van Meter Community School and other school districts transforming education by adopting such initiatives as the one-to-one program around the globe. The wiki was a place for these schools and individuals to collaborate online by being able to join and edit the wiki. The wiki contained five pages which included: "Blogs To Follow" contained several Van

Meter teacher blogs including Van Meter secondary principal Deron Durflinger's blog #vanmeter Schools Transforming the Educational System. His blog focused on how the educational system needed to change to meet the needs of learners by becoming more individualized and connecting students to their passions. He also recommended that teachers need to change the way they teach by becoming connected to rich resources, technology, and others around the world. He highlighted events, which took place at Van Meter such as students and staff presenting to the Iowa Board of Education.

"Get Informed" contained several videos that tied into the Van Meter philosophy such as *Vision of K-12 Students Today* which demonstrated that students who are engaged learn more. This page also contained Van Meter Community School documents supporting the educational transformation and one-to-one laptop initiative such as 2008-2009 Van Meter Rigor and Relevance Model by Van Meter superintendent John Carver and the Building Leadership Team. Various online resources such as the Iowa 1 to 1 wiki created by Iowa State University CASTLE program were included to support the educational change at Van Meter. "JOIN the Twitter Shout Out" contained a running list of people who support educational transformation all around the world.

"Student Work" showcased a variety of work from Van Meter students ranging from iMovies, Youtube channels to hold work, Keynotes, projects created with Web 2.0 tools, and Google sites created for various school and extra-curricular activities.   The student work included: Michael's YouTube channel Mike398100 which he created to hold videos he created for reading, geography and technology class during his 7th grade year; Maddy's iMovie "Making a Difference at Van Meter" discussed the connection she made with young adult author Amy Efaw after connecting to her through a Van Meter Library Voice blog post; and the Great Strides iMovie group project was created by the

Van Meter National Honor Society to raise money for children with club foot around the world.

Think, Lead, and Serve Google Site highlighted the entire Van Meter Community School District. It contained the following pages: 7-12 Happenings which included 1:1 Laptop Initiative, Secondary Social Networks and Tools, Students Work, and Virtual Reality Program; Administration Team Connection; Helpful Technology Tips; K-6 Happenings; News About Our School; Parent Information including digital citizenship and Internet safety materials used in parent workshops; Teaching and Learning by Jen Sigrist, Van Meter Director of Teaching and Learning; *Van Meter YouTube Channels*; and *Van Meter Library Voice*. The *ThinkLeadServe Wiki* was used to not only support the Van Meter staff and community, but also to highlight the educational change at Van Meter when speaking to other individuals and groups in Iowa and around the world.
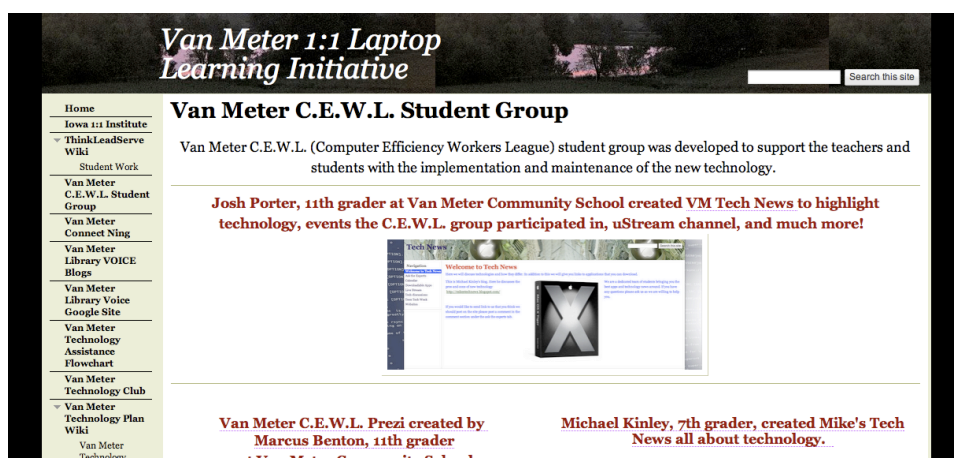
Van Meter C.E.W.L. Student Group

Figure 16. Van Meter C.E.W.L. Student Group

The Van Meter C.E.W.L. (Computer Efficiency Workers League) student group was developed to support the teachers and students with the implementation and

maintenance of the one-to-one laptop learning initiative and other technology. As shown in Figure 16, there are numerous ways C.E.W.L. assisted in the support of the one-to-one laptop learning initiative including:

- Josh's *VM Tech News Google Site* which contained resources to support teachers and students within the school community and beyond.

- *Mike's Tech News* was a blog where he highlighted specific technology questions, projects, and problems from the Van Meter school community.

- *YouTube Channel Mike398100* contained video tutorials he created and various school projects from language arts, reading, and technology class.

- Marcus' *C.E.W.L. Prezi* was created to show the Van Meter school community and others the purpose of group within the technology integration and educational transformation at Van Meter.

FLOWCHART FOR TECHNOLOGY ASSISTANCE

	How can I use technology?	How can I fix technology?
Step 1	HELP located in the top tool bar and Video Tutorials found under this menu of every Apple application Atomic Learning (AEA Resource) at http://www.atomiclearning.com/home (username: vanmeter1/password: aea11) Peers 1(800) Apple-Care	Simple Troubleshooting Steps: 1. Reboot computer 2. Check wireless connection (airport at top of your computer) 3. Check System Preferences (it is a silver gears box on your dock). You can check here for volume control, displays, universal access, etc… Peers 1(800) Apple-Care
Step 2	CEWL (Computer Efficiency Workers League) • Hooking up video cameras, using applications on the MacBook, etc… District Teacher Librarian: Shannon Miller • Curriculum integration ideas • Flexible scheduling to integrate technology and information literacy curriculum	CEWL (Computer Efficiency Workers League) District Teacher Librarian: Shannon Miller • 5 minute fixes • Audio/Visual as well • Downloading rights
Step 3		Director of Technology: Mike Linde

Please follow Step 1, Step 2, and Step 3 when you need help USING or FIXING technology.

Figure 17. Van Meter School Flowchart for Technology Assistance

The C.E.W.L. student group served as Step 2 in the Flowchart for Technology Assistance (Figure 17) by assisting teachers and students with these two questions: how can I use technology and how can I fix technology? The C.E.W.L. group and researcher held regular meetings to discuss how the school was being supported, new Web 2.0 tools, shared knowledge about the Apple applications, and opportunities to get involved in the implementation process. The C.E.W.L. group was also involved in the Apple training at Van Meter.

Several members of C.E.W.L. created resources on their own to be used to support the one-to-one laptop learning initiative at Van Meter.

Figure 18. VM Tech News

One member of C.E.W.L. created *VM Tech News* shown in Figure 18. VM Tech News included the following pages: Welcome to Tech News with a link to blog Mike's Tech News; Ask the Experts included a Message Board to ask questions to C.E.W.L. and Mike398100 YouTube channel for video tutorials such as How to Download YouTube videos and Screen Flow Review and How to Use It; calendar to highlight upcoming technology evens at Van Meter; Downloadable Apps with suggestions for applications such as Screenflow and Cinch to load onto the MacBook; Live Stream held uStream events recorded from Van Meter including a video of Judy Jeffrey Director of the Iowa

Department of Education speaking with Van Meter students on April 13, 2010; Tech

Discussion held news about technology found on the internet; Teen Tech Week contained

materials used March 7-13, 2010; and websites which contained Web 2.0 tools.
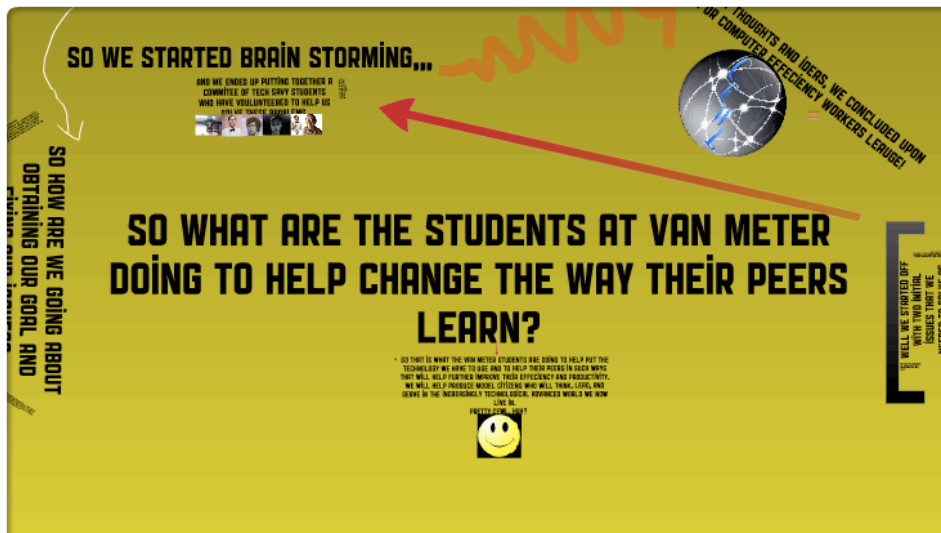

Figure 19. C.E.W.L. Prezi

An 11th grader at Van Meter Community School, created the C.E.W.L. Prezi shown

in Figure 19. The Prezi explained the role of C.E.W.L. within the Van Meter Community

School. Marcus and the C.E.W.L. group used this to educate students, teachers, and the

community of Van Meter.

Figure 20. *Mike's Tech News Blog*

   A Van Meter 7th grader created *Mike's Tech News* (Figure 20) to

discuss the latest technology and Apple news such as iPad Initiative Impressions, New

Mac Line Up and Upgrade Coming, 3D TV's, and xBox 360. The blog also showcased

the work he was creating with his Macbook for school projects which included the

an iMovie he created for junior high technology class entitled Technology Parts and

Their Functions. He described how a computer worked by showing the inside of a

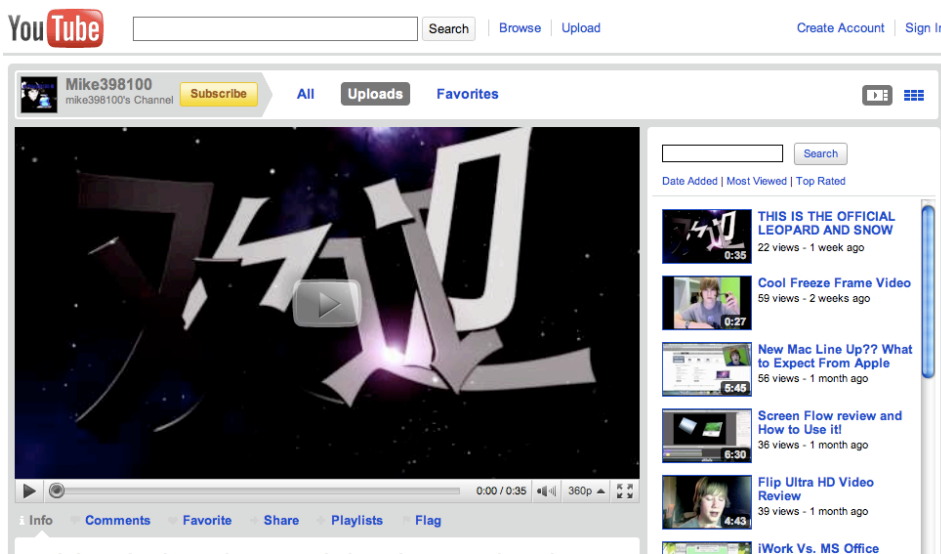computer through images, photographs, and voice over in the iMovie.

Figure 21. *Mike398100 YouTube Channel*

As shown in Figure 21 Michael also created the *Mike398100 YouTube Channel* to showcase technology tutorials and school projects that he created. Michael's YouTube channel included Cool Freeze Frame Video, New iMac Line Up? What to Expect from Apple, Screen Flow View and How to Use It, Flip Ultra HD Video Review, iWork vs. MS Office, How to Get Any Game Into Your Dashboard, and How to Protect a Mac from Viruses.

Van Meter Connect Ning: 1:1 Laptop Initiative Group

Figure 22. *Van Meter Connect Ning 1:1 Laptop Initiative Group*

    The 1:1 Laptop Initiative Group included in the *Van Meter Connect Ning* (Figure 22) was created for Van Meter students, teachers, parents, community members, and others to collaborate, connect, and share ideas involved in such an environment. Students joined to learn new web 2.0 resources and share what they have learned with others. Teachers joined to connect with others within the school community to learn what teachers and students were creating in the classrooms and gain valuable web 2.0 and online resources. Parents and community members joined to post questions about the technology initiative within the school and view what was happening at Van Meter School. Also, the 1:1 Laptop Initiative Group assisted in getting various school districts connected and giving teachers, administrators, and students support during the implementation process. As the subtitle suggested "A Place to Think, Lead, and Serve" the *Van Meter Connect Ning* also contained groups entitled Web 2.0 Resources, Teacher Librarians, What's Up in Your Classrooom, and Van Meter Virtual Reality. Valuable connections that were made through the Van Meter Connect Ning were Jen Sigrist, Van Meter Director of Teaching and Learning, looking for people to collaborate on how others were assessing student creativity and thinking skills in a one-to-one environment; Shawn Hyer, Van Meter junior high reading teacher, posted the question "What ways can Twitter be used by a teacher"; and William Bannick from Drexel Hills, Pennsylvania connected with Van Meter through the *Van Meter Connect Ning* and planned a visit in May 2010 to learn more from one another.
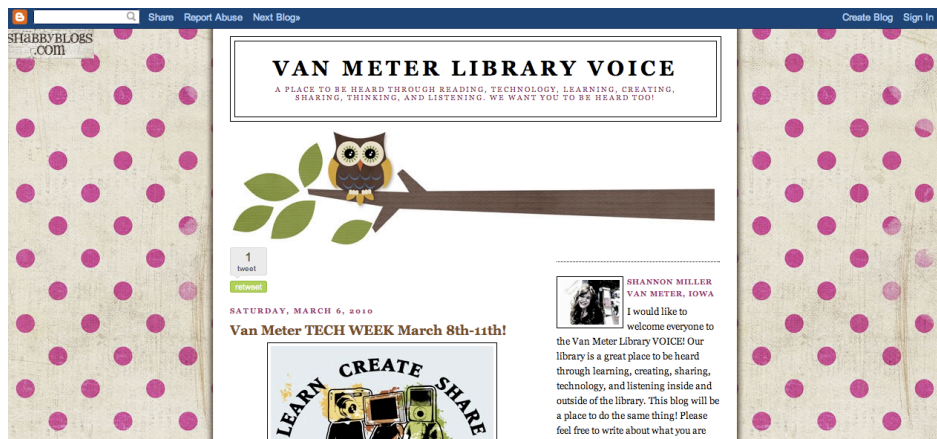
Van Meter Library Voice Blog

Figure 23. *Van Meter Library Voice Blog*

At the beginning of the 2009-2010 school year the researcher who serves as the district teacher librarian at Van Meter wanted to create a brand for the libraries within the school. With a growing importance for students and teachers to connect with others and be heard through various methods throughout the educational process, she decided VOICE was the perfect name. The Van Meter Library Voice Blog shown in Figure 23 was created to not only support the philosophy of the library but also to support the one-to-one laptop learning initiative within Van Meter School by showcasing student work, highlighting web 2.0 tools and various technologies, and most of all to encourage all types of connecting, learning, and teaching throughout the school district and around the world.

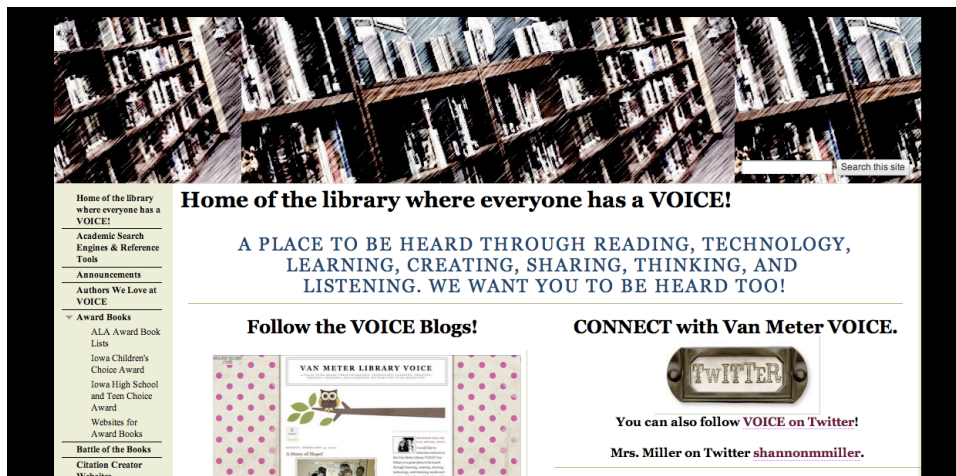*Van Meter Library Voice Google Site*

Figure 24. *Van Meter Library Voice Google Site*

The *Van Meter Library Voice Google Site* as shown in Figure 24 was created to support the one-to-one laptop learning initiative at Van Meter Community School district in a variety of ways. The site brought together online resources including academic search engines and reference tools; citations creator websites; brain games, fun sites, and subject resources for students; online homework help; image, sound, and video online resources; information and technology literacy information including copyright and internet safety resources (Figure. 25); Mrs. Miller's Diigo Library; reading, book, and author web 2.0; research pathfinders created for teachers and students by Mrs. Miller; student work and laptop news (Figure. 26); VOICE blogs; and dozens of Web 2.0 tools (Figure. 27).

Figure 25. *Van Meter Library Voice Google Site*: Information and Technology Literacy

As shown in Figure 25 the *Van Meter Library Voice Google Site* contained

Information about the Big6 research model adopted during the 2009-2010 school

year; copyright and fair use policies; and Internet safety information. With the one-to-

one laptop learning initiative, Van Meter was proactive in the education of students,

teachers, parents, and community members about these important issues to insure

the success of such a program.

Figure 26. *Van Meter Library Voice Google Site*: Student Work and Laptop News

The researcher included a page for Student Work and Laptop News (Figure 26) to

highlight the happenings within the one-to-one laptop learning initiative at Van Meter.

Student work assigned by the secondary teachers at Van Meter was highlighted here on a

rotating bases. Examples included on the site were Paxton's and Jenny's PowerPoint's

about Internet safety, Jennifer and Sarah's Hear Us Read blog, and Kelsey's September

11th commemorative Pages flyer created in the researchers Information and Technology

Literacy HEX taught to all 7th graders at Van Meter. The Des Moines *Register* article

entitled "Small Schools Become Technology Pioneers*"* by Staci Hupp was also included

on this page (Hupp, 2009).
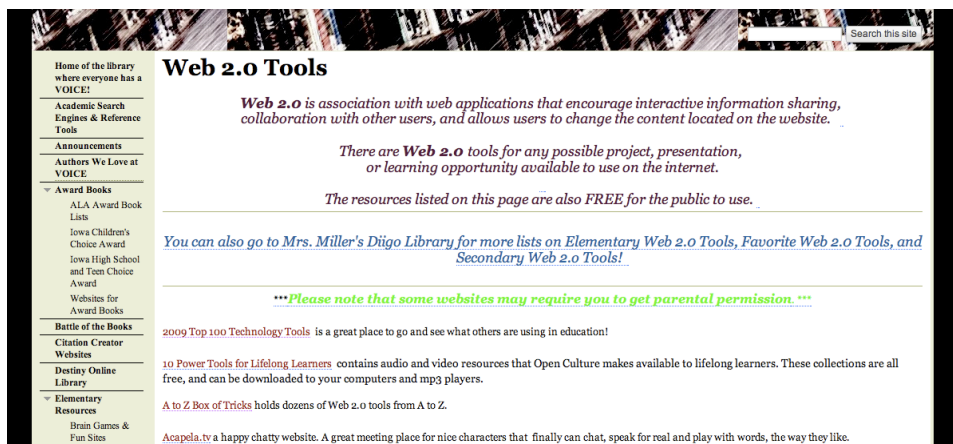
Figure 27. *Van Meter Library Voice Google Site*: Web 2.0 Tools

    With the wealth of free Web 2.0 tools available the researcher compiled a list of the

tools that she found through research, reading, connecting, and from her PLN (personal

learning network). The students and teachers at Van Meter referred to the list shown in

Figure 27 for locating resources to use and integrate into the one-to-one laptop learning

initiative.

Van Meter Technology Assistance Flowchart

    The Van Meter Flowchart for Technology Assistance shown in Figure 17 was

developed by Van Meter Director of Teaching and Learning, Jen Sigrist, and the

researcher. The flowchart was given to all staff and students to answer the two questions:

how can I use technology and how can I fix technology. Students and staff members

followed steps 1, 2, and 3 while working with electronic resources, peers, 1(800) Apple-Care, the C.E.W.L. student group, Van Meter Director of Technology Mike Linde, and the researcher. The flowchart was posted in the classrooms and was available online at the Van Meter School website.

Van Meter Technology Club
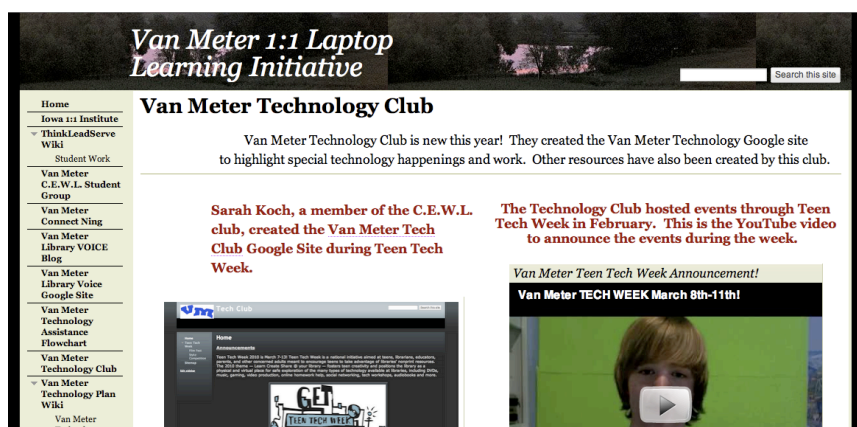
Figure 28. Van Meter Technology Club

As shown in Figure 28, the Van Meter Technology Club was created during the 2009-2010 school year by students and the researcher. The technology club gave students a place to connect, create, learn, and share with others who have similar interests and passions. The Van Meter Technology Club met in the secondary library after school and participated in a show-n-tell presentation at parent/teacher conferences. The VM Tech Club Google Site and the Van Meter Teen Tech Week YouTube video are artifacts the group created for the students at Van Meter during the 2009-2010 school year.

Figure 29. *VM Tech Club Google Site*

Sarah, an 8th grader at Van Meter and member of C.E.W.L., created the *VM Tech Club Google Site* shown in Figure 29. On VM Tech Club members share information for upcoming technology events at Van Meter. In March 2010, the Tech Club highlighted Teen Tech Week by posting a YouTube video, news about a video contest, and a gaming schedule within the library for March 7-13, 2010

Figure 30. YouTube Video entitled Van Meter Teen Tech Week

The Van Meter Technology Club planned events for Teen Tech Week from March 8th-11th. Michael created this special service announcement YouTube video to highlight the special happenings of the week at Van Meter which included a Film Fest,

Figure 29. *VM Tech Club Google Site*

Sarah, an 8th grader at Van Meter and member of C.E.W.L., created the *VM Tech Club Google Site* shown in Figure 29. On VM Tech Club members share information for upcoming technology events at Van Meter. In March 2010, the Tech Club highlighted Teen Tech Week by posting a YouTube video, news about a video contest, and a gaming schedule within the library for March 7-13, 2010

Figure 30. YouTube Video entitled Van Meter Teen Tech Week

The Van Meter Technology Club planned events for Teen Tech Week from March 8th-11th. Michael created this special service announcement YouTube video to highlight the special happenings of the week at Van Meter which included a Film Fest,

show-n-tell, video contest, and Skykz contest (Figure 30).

Van Meter Technology Plan Wiki
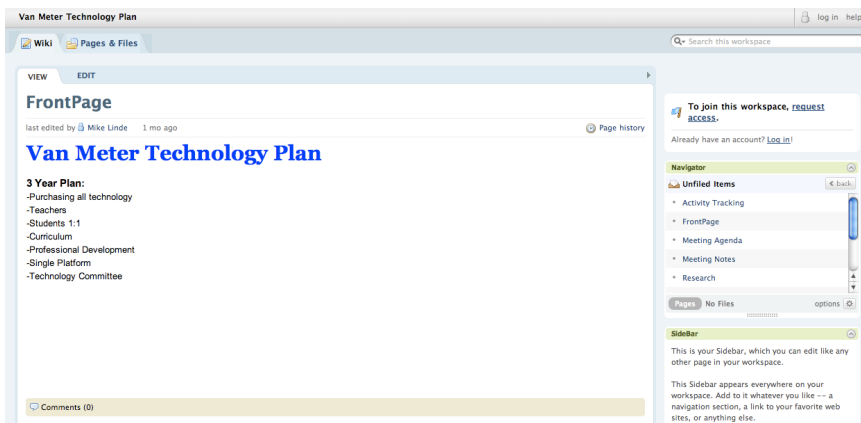
Figure 31. *Van Meter Technology Plan Wiki*

The Van Meter Technology Committee created the *Van Meter Technology*

Plan Wiki (Figure 31) to organize and share the work of the committee. A wiki was used

because multiple members could collaborate online and edit the work contained within

the site. The wiki held meeting agendas, meeting notes, research to support the

technology plan, technology professional development, Van Meter technology artifacts,

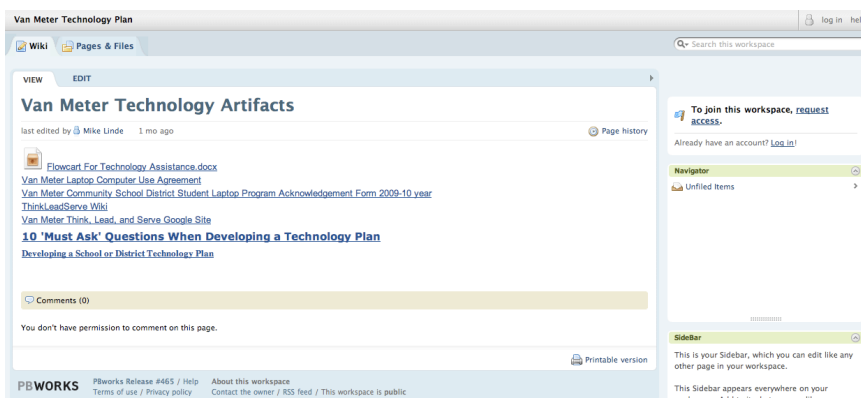and the vision of the technology committee.

Figure 32. Van Meter Technology Artifacts

As shown in Figure 32, the Van Meter Technology Artifacts page in the *Van Meter*

Technology Plan Wiki contains the Flowchart for Technology Assistance, Van Meter

Laptop Computer Use Agreement (Figure 34), Van Meter Community School District

Student Laptop Program Acknowledgement Form 2009-2010 (Figure 33), *Van Meter 1:1*

Laptop Learning Initiative Google Site: Van Meter Think, Lead, and Serve Google Site

(Figure 35), and the *Van Meter Think, Lead, and Serve Google Site* (Figure 36). All of

these resources were used collaboratively by committee members as they developed

curriculum, policies, and professional development for the district

Van Meter Community Schools
LAPTOP COMPUTER USE AGREEMENT
Please read this entire section carefully.

This agreement is made effective upon receipt of computer, between the Van Meter Community School District (VMCSD), the student receiving a laptop ("Student"), and his/her parent(s) or legal guardian ("Parent"). The Student and Parent(s), in consideration of being provided with a laptop computer, software, and related materials (the "Computer") for use while a student is at Van Meter Community School District, hereby agree as follows:

1 Equipment
 1.1 Ownership: VMCSD retains sole right of possession of the Computer and grants permission to the Student to use the Computer according to the guidelines set forth in this document. Moreover, Van Meter administrative staff retains the right to collect and/or inspect the Computer at any time, including via electronic remote access; and to alter, add or delete installed software or hardware.
 1.2 Equipment Provided: Efforts are made to keep all laptops configurations the same. All Computers include a DVD/CD-RW, ample RAM and hard-disk space, a protective laptop case, software, and other miscellaneous items. VMCSD will retain records of the serial numbers of provided equipment.
 1.3 Substitution of Equipment: In the event the Computer is inoperable, VMCSD has a limited number of spare laptops for use while the Computer is repaired or replaced. However, it cannot guarantee a loaner will be available at all times. This agreement remains in effect for such a substitute. The Student may NOT opt to keep a broken Computer or to avoid using the Computer due to loss or damage. Please note that if the Student forgets to bring the Computer or power adapter to school, a substitute will not be provided.
 1.4 Responsibility for Electronic Data: The Student is solely responsible for any non-VMCSD installed software and for any data stored on the Computer. It is the sole responsibility of the Student to backup such data as necessary. VMCSD provides a means for backup along with directions but VMCSD does not accept responsibility for any such

Figure 33. Van Meter Community Schools Laptop Computer Use Agreement

Figure 34. Van Meter Community School District Student Laptop Program

Acknowledgment Form 2009-2010 School Year

Van Meter Think, Lead, and Serve Google Site

Figure 35. *Van Meter 1:1 Laptop Learning Initiative Google Site*: *Van Meter Think,*

Lead, and Serve Google Site

Figure 36. *Van Meter Think, Lead, and Serve Google Site*

The *Van Meter Think, Lead, and Serve Google Site* shown in Figure 36 contained a variety of resources for the district technology initiative. This site was shared with others in Van Meter and all over the world to show how the school was thinking differently. The pages contained in the *Van Meter Think, Lead, and Serve Google Site* were: 1:1 Laptop Initiative, Secondary Social Networks and Tools, and Student Work; Administrative Team Connection; Follow and Contact Us; Helpful Technology Tools; News About Our School; Parent Information; SAI 1:1 Wiki; Teaching and Learning; Van Meter Channels on YouTube; and the Van Meter Library VOICE.

Figure 37. *Van Meter Think, Lead, and Serve Google Site: 1:1 Laptop Initiative*

The *Van Meter Think, Lead, and Serve Google Site 1:1 Laptop Initiative Page*

shown in Figure 37 contained numerous resources to support Van Meter Community

School and other school districts implementing such a program. Throughout the 2009-

2010 school year there were several news stories developed about the laptop initiative at

Van Meter. These stories were located on this page. Also, several digital resources

including: Iowa 1:1 Schools blog; Van Meter principal Deron Durflinger's blog entitled

#Vanmeter Schools Transforming the Educational System;Van Meter superintendent

John Carver's blog entitled *Van Meter Think, Lead, and Serve*; the *Van Meter Bulldogs*

Wiki which Durflinger used to communicate Friday morning staff meeting notes,

professional development opportunities, community news, and important calendar

updates with the secondary staff; the Van Meter Bulldog and *Van Meter Librarian*

YouTube Channels, *Van Meter Library VOICE Google Site*, and the *Van Meter Think,*

Lead, and Serve Google Site.

Figure 38. *Van Meter Think, Lead, and Serve Google Site*: Parent Information
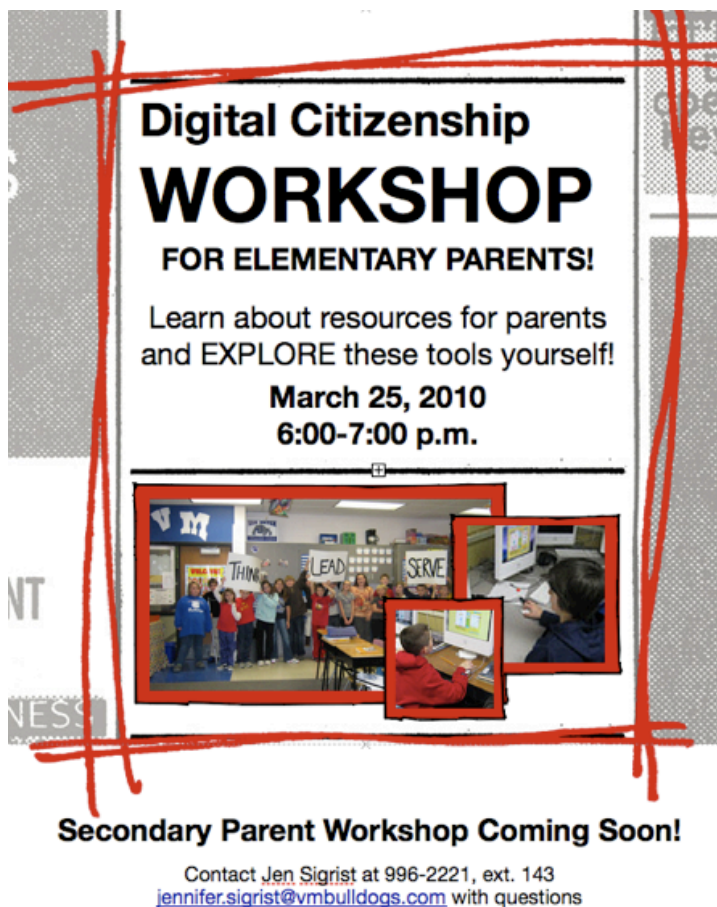
Figure 39. Van Meter Digital Citizenship Workshop For Elementary Parents Flyer

An important and essential part of implementing a one-to-one laptop learning initiative into a school district is to educate the parents and community about internet safety, social networking, digital tools, and how such an initiative can change the education of our children. The *Van Meter Think, Lead, and Serve Google Site* Parent Information page (Figure 38) held this information.

Jen Sigrist, Van Meter Director of Teaching and Learning and the researcher developed parent and community workshops to educate these audiences (Figure 39). At the workshop they covered the digital citizenship topics of internet safety and social networking. The NetSmartz online curriculum created by the National Center for Missing and Exploited Children and Common Sense Media parent advice handouts entitled

Common Sense on Internet Safety and Common Sense on Social Networking were used.

Des Moines Area Community College Electronic Crime Institute also conducted four

workshops on Internet safety, social networking, and digital footprints for parents and

students throughout the year at Van Meter Community School.

Van Meter YouTube Channels
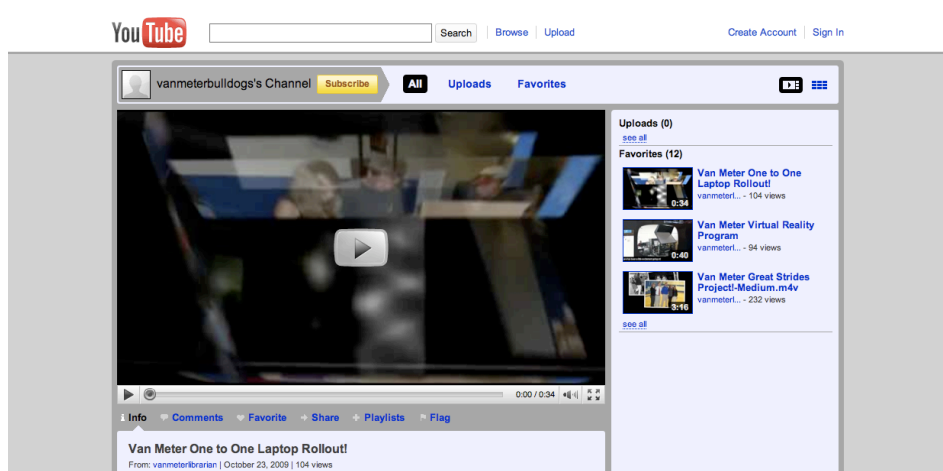
Figure 40. *Van Meter Bulldogs (vanmeterbulldogs) YouTube Channel*

The researcher created the *Van Meter Bulldogs YouTube Channel* during

the 2009-2010 school year (Figure 40). Several YouTube videos were placed on this

channel that supported the one-to-one laptop learning initiative at Van Meter. In April

2010, the Van Meter Bulldogs YouTube channel contained twelve videos. The title,

description, and length of each video is located in Table 2.

Van Meter Bulldogs YouTube Channel Videos	Description	Length
1:1 Schools (D. Durflinger)	Deron Durflinger, Van Meter secondary principal, talks about the effects of becoming a 1:1 school. Nick Sauers of the Iowa State University Castle program created this video.	2:07

1:1 Schools (J. Sigrist)	Jen Sigrist, Van Meter director of teaching and learning, discusses the effects that becoming a 1:1 school has had on student engagement at Van Meter. Nick Sauers of the Iowa State University Castle Program created this video.	2:08
11-18 Van Meter Technology Upgrade (Dallas County News)	Dallas County News featured this story on November 18, 2009. This video highlights how the 1:1 laptop program produced significant changes in the way students are educated at Van Meter.	7:03
11-18 Van Meter Virtual Reality Simulator (Dallas County News)	Dallas County News also featured this news video. In addition to the 1:1 laptop program at Van Meter, the school also added a virtual reality simulator this year.	3:58
King Dreamers and the Van Meter N.H.S. Christmas	This is a iPhoto slideshow of the N.H.S. party with the 4th graders at King Elementary in Des Moines.	2:05
N.H.S. Great Strides Project	This video was created by the junior and senior N.H.S. students at Van Meter for the Great Strides Project. They used iPhoto, iMovie, and recorded in a local sound booth to create this YouTube video.	2:44
Superintendent Discusses Role of Laptops	In this video created by Nick Sauers from Iowa State University Castle Program John Carver, Van Meter Superintendent, discusses how Van Meter moved to a 1:1 laptop environment during the 2009-2010 school year.	2:42
Van Meter Great Strides Project	This video highlights the Van Meter Great Strides project. The researcher took pictures using a still camera, uploaded them to iPhoto, and created a slideshow.	3:16
Van Meter N.H.S. –Night	This video was created using Animoto, a web 2.0 tool. It highlighted the volunteer event at	0:31

Eyes October 2009	Night Eyes at the Blank Park Zoo in Des Moines, Iowa.	
Van Meter One to One Laptop Rollout	The researcher created this YouTube video using the web 2.0 tool Animoto. It highlights how Van Meter handled the roll out of over 350 laptops in August 2009.	0:34
Van Meter Student Connects with Amy Efaw	Maddy, a Van Meter 7th grader, connected with young adult author Amy Efaw through the Van Meter Library VOICE blog. She used Skype to have a virtual book conversation with Efaw. This is a iMovie Maddy created to tell the story of her connection.	2:55
Van Meter Virtual Reality Program	This video was created using Stupeflix, a web 2.0 tool. These pictures were taken with a still camera and uploaded onto a MacBook.	0:40

Table 2. Contents of the Van Meter Bulldogs YouTube Channel
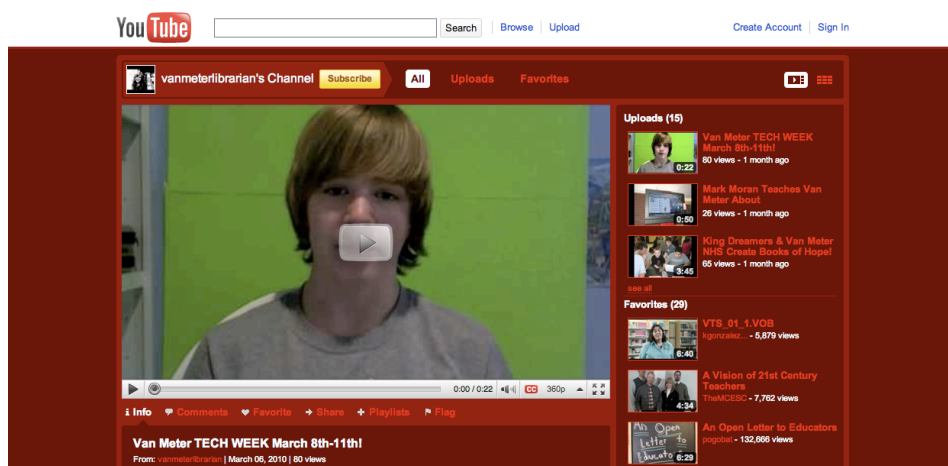
Figure 41. *Van Meter Librarian (vanmeterlibrarian) YouTube Channel*

As shown in Figure 41, the researcher also created a YouTube channel, Van Meter Librarian, for the *Van Meter Library VOICE* during the 2009-2010 school year. As shown in Table 3, the Van Meter Librarian YouTube channel contained 15 uploaded

videos and 29 videos were marked as "favorites." The Van Meter Librarian also had 19

people who subscribed and followed the channel.

Van Meter Librarian YouTube Channel **Videos**	Description	Length
Ice Cream	This video was created by two Van Meter 7th graders for the technology class they take with the researcher. They used iMovie.	2:09
King Dreams and Van Meter N.H.S. Create Books of Hope	The researcher created this iPhoto slideshow. The video shows how Van Meter members used their laptops with 4th graders at King Elementary in Des Moines to create books for the Books of Hope program in Uganda.	3:45
King Dreamers and Van Meter N.H.S. Christmas Party	This is a iPhoto slideshow of the N.H.S. party with the 4th graders at King Elementary in Des Moines. The photos were taken with a MacBook.	2:05
Mark Moran Teaches Van Meter About findingDulcinea	Mark Moran, CEO and founder of findingDulcina, taught Van Meter students via Skype about his resources. The researcher connected with him on Twitter.	0:50
N.H.S. Great Strides Project	This video was created by the junior and senior N.H.S. students at Van Meter for the Great Strides Project. They used iPhoto, iMovie, and recorded in a local sound booth to create this YouTube video.	2:44
Our 1st Grade Authors	After the Van Meter 1st graders created their own books in the library, the researcher created a iPhoto slideshow using photos taken with her MacBook.	2:05
Our 4th Graders Using Web 2.0 to Create and Connect with Caldecott Winners!	While studying the Caldecott Award and *Where the Wild Things Are* the Van Meter 4th graders used the web 2.0 tools called Wild Yourself to create these great pictures. The	2:06

	researcher saved each creation as a image in iPhoto and made it into a slideshow.	
Van Meter 7th Graders Learning With Ruggero About YouTellYou	Ruggero Domenichine, creator of the web 2.0 tool called YouTellYou, taught the Van Meter 7th graders how to create their own story.	0:32
Van Meter Great Strides Project	This video highlights the Van Meter Great Strides project. The researcher took pictures using a still camera, uploaded them to iPhoto, and created a slideshow.	3:16
Van Meter N.H.S. at Night Eyes October 2009	This video was created using Animoto, a web 2.0 tool.	0:31
Van Meter Presents to SAI Members	This is one of the speaking opportunities Van Meter had during the 2009-2010 school year. Several teachers, including the researcher, and students talked to the School Administrators of Iowa group about the 1:1 program.	0:32
Van Meter Student Connects with Amy Efaw	Maddy, a Van Meter 7th grader, connected with young adult author Amy Efaw through the Van Meter Library VOICE blog. She used Skype to have a virtual book conversation with Efaw. This is a iMovie Maddy created to tell the story of her connection.	2:55
Van Meter Teen TECH Week March 8-11, 2010	This is the public service announcement that C.E.W.L. member Michael created for Van Meter's Teen Tech Week. He used the camera on his MacBook and iMovie to create the video.	0:22
Van Meter Virtual Reality Program	This video was created using Stupeflix, a web 2.0 tool. These pictures were taken with a still camera and uploaded onto a MacBook.	0:40
What Technology Means to Me	Van Meter student created this iMovie for a Facebook contest. He used iMovie and Screenflow to create this video. Josh's video is a great example of how the 1:1 laptop	2:20

	learning initiative has changed the lives and education of the students at Van Meter.	

Table 3. Contents of the *Van Meter Librarian YouTube Channel*

Communicating with the Larger Education Community

Van Meter Twitter

Figure 42. *Van Meter 1:1 Laptop Learning Initiative*: Van Meter Twitter

Twitter became an important part of the 1:1 laptop learning initiative at Van Meter

Community School by forming connections and creating collaboration all over the world

(Figure 42).
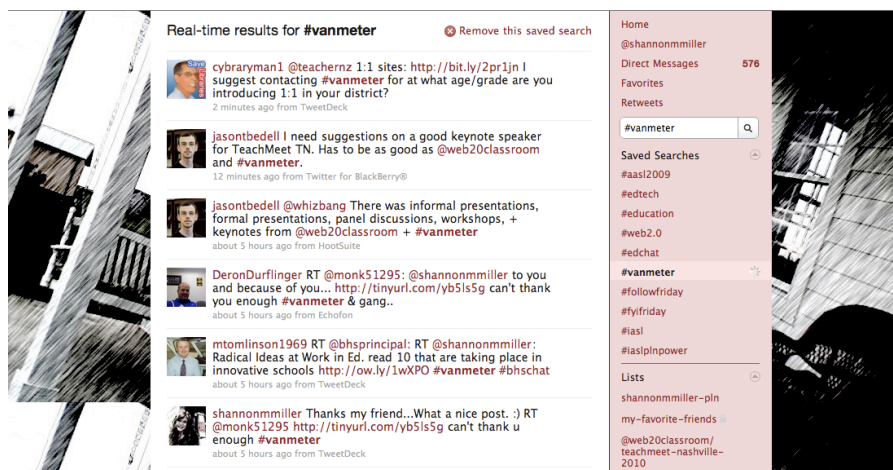
Figure 43. #vanmeter Twitter Stream

Van Meter created a hashtag (#) specific to the school during the 2009-2010 school year. Van Meter was followed on Twitter at #vanmeter as shown in Figure 43. This enabled the school community to connect with people who had implemented or were interested in one-to-one laptop learning initiatives all over the world. By using #vanmeter Twitter users were able to tag information and resources important to the district.

Figure 44. *Van Meter Library Voice (@vmlibraryvoice) Twitter Stream*

The researcher created a Twitter account for the *Van Meter Library VOICE* (@vmlibraryvoice) as shown in Figure 44. Here student, teachers, parents, and others could connect to resources, blog posts, student work, and news provided by the researcher from the library.
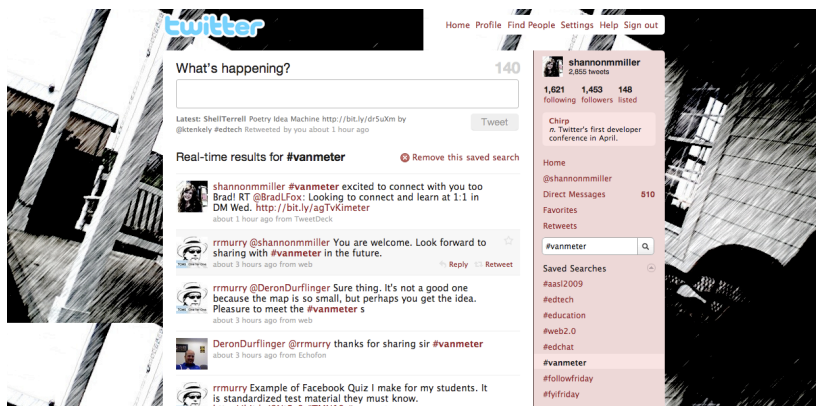
Figure 45. Shannon Miller (@shannonmmiller) Twitter Stream

As shown in Figure 45, the researcher also created a Twitter account for herself (@shannonmmiller). In April 2010, @shannonmmiller had over 1,600 followers and followed 1,738 people. Twitter allowed her to connect with other teacher librarians, technology coordinators, administrators, teachers, students, and college professors, implementing and interested in a one-to-one laptop learning initiative.
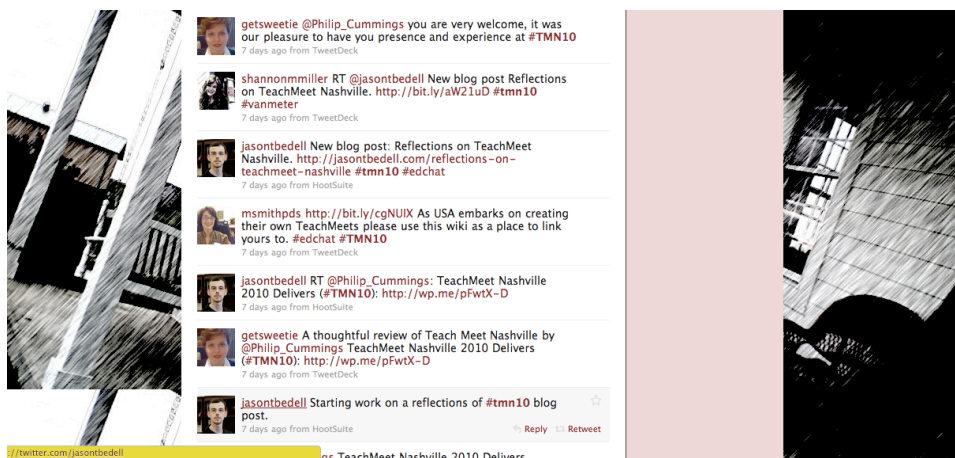
Figure 46. Teach Meet Nashville 2010 Conference (#tmn10) Twitter Stream

Twitter also formed several connections and one led to a speaking opportunity at Nashville TeachMeet 2010 (#tmn10) as shown in Figure 46. John Carver, Deron Durflinger, and the researcher were the keynote speakers at Nashville TeachMeet. Their keynote was entitled Van Meter Teach, Lead, and Serve in a 1:1 Laptop Environment. Administrators, teachers, teacher librarians, technology directors, and college professors attended this two day conference at the Nashville Public Library.

Iowa 1:1 Institute
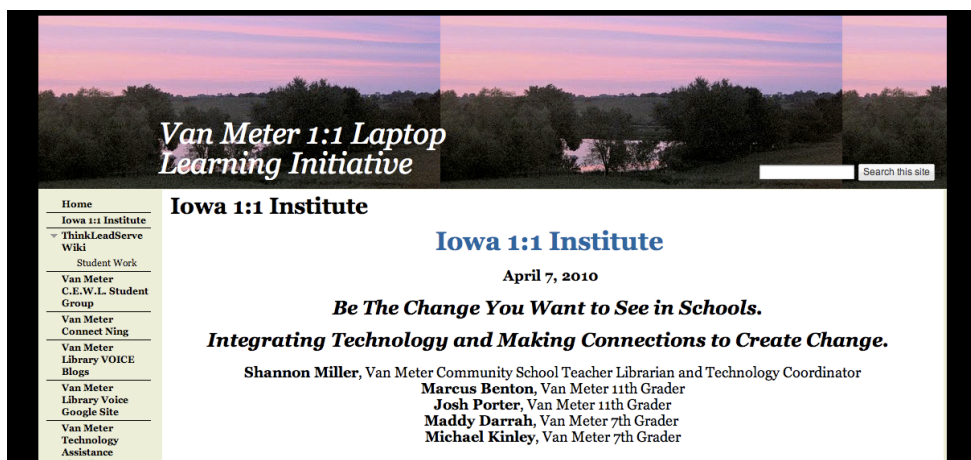
Figure 47. *Van Meter 1:1 Laptop Learning Initiative Google Site: Iowa 1:1 Institute*

On April 7, 2010 the Van Meter Community School staff attended the first Iowa

1:1 Institute hosted by the Castle Program at Iowa State University and Iowa schools

implementing a one-to-one program. The researcher along with eight other staff members

presented throughout the day.

The title of the researchers presentation was "*Be the Change You Want to See in*

School: Integrating Technology and Making Connections to Create Change." The

researcher brought four Van Meter students to discuss how the one-to-one laptop

learning initiative had created a change in their education. For the presentation, the

researcher created the Iowa 1:1 Institute Page within the *Van Meter 1:1 Laptop Learning*

Initiative Google Site as shown in Figure 47. At the presentation and throughout the day,

the presenters distributed business cards with http://bit.ly/vanmeter1to1change included.

By attending the conference as a group, the Van Meter staff presented valuable

professional development on the one-to-one laptop learning initiative to fellow staff

members and others in attendance. This was an effective way for the researcher and

students to educate the Van Meter staff and others about resources available on the *Van Meter 1:1 Laptop Learning Initiative Google Site.*

Once the site was developed the researcher purchased a domain from GoDaddy.com (http://godaddy.com). The domain for the *Van Meter 1:1 Laptop Learning Initiative Google Site* was http://vanmeter1to1laptoplearninginitiative.com. The Google site developed was a valuable resource to the teachers, students, parents, and community at Van Meter Community School. The resources within the site continued to grow and change as the implementation of the laptops continued.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Educating the Van Meter Community

As a one-to-one laptop learning initiative is integrated into a school environment it is essential that the school community as a whole is educated about all aspects of the implementation process (Zucker, 2006). With a variety of resources to support students, teachers, parents, and other community members in place, the one-to-one initiative has a better chance of being successful for all involved. The primary research question asked "what types of resources effectively support implementation of a one-to-one laptop learning initiative?" To answer this question and support the Van Meter Community School District, the researcher created the Van Meter 1:1 Laptop Learning Initiative Google site, which contains digital resources and artifacts used for educating the various populations involved in this learning initiative.

The secondary research question asked "what content should be included in digital resources to support a one-to-one laptop learning initiative?" The final Google site content included: *Iowa 1:1 Institute, ThinkLeadServe Wiki, Van Meter C.E.W.L. Student Group Information, Van Meter Connect Ning, Van Meter Library Voice Blog, Van Meter Library Voice Google Site, Van Meter Technology Club Google Site, Van Meter Technology Plan Wiki, Van Meter Think, Lead, and Serve Google Site, Van Meter Twitter*, and *Van Meter YouTube Channels*.

An additional secondary research question asked "what are the most effective tools used in the implementation process of a one-to-one laptop learning initiative program within a school community?" The digital content included in the Van Meter 1:1

Laptop Learning Initiative Google site reached various target audiences. The researcher

shared the new Google site with the teachers, students, parents, and community members

through email, Twitter, the Van Meter Library Voice Facebook page, and the Van Meter

Library Letter newsletter. Teachers at Van Meter used the Google site as a place to go

for information related to the one-to-one laptop learning initiative. The technology

committee used the Van Meter Technology Plan wiki to hold created policies and

information gathered. Students used it to find the various resources they created for the

Van Meter C.E.W.L. group, Van Meter Tech Club, and web 2.0 tools. Community

members referred to the website for various news updates and important information.

For example, parents subscribed to the Van Meter Library Voice blog and commented on

work posted. Also, parents would refer to the *Think, Lead, and Serve Google Site* Parent

Information page for workshop dates and Internet safety information to assist their

children.

Table 4 outlined the target audiences and purpose of each digital tool or page

contained within the Google site. The table also explained the future intentions the

researcher had for each digital tool.

Digital Tools	Target Audience(s)	Purpose Met	Future Intentions
Iowa 1:1 Institute	Van Meter staff; attendees of the Iowa 1:1 Institute and others who follow the ISU 1:1 Castle Blog and program; and anyone interested in creating a change through a one-to-one laptop initiative	This page of the site was used as a resource at the Iowa 1:1 Institute when the researcher presented. It was used as a resource for participates afterwards too.	The researcher will keep this page on the site to use for future presentations and for participants to refer to also.

ThinkLeadServe Wiki	Van Meter staff, students, parents, community, and others interested in one-to-one initiative	This digital tool was used as a collaborative and informational site for Van Meter Community School and others.	The ThinkLeadServe wiki will continue to be used as a place to collaborative and share within and outside of the school community.
Subpage: Student Work	Van Meter staff, students, parents, community, and others interested in one-to-one initiative	This page was a place for students and teachers to share the work being created with others.	This will be a focus area for the researcher in the future. Student work will continue to be added to this page and shared.
Van Meter C.E.W.L. Student Group Information	Van Meter C.E.W.L. group, students, and staff.	The Van Meter C.E.W.L. group was a key ingredient in the successful implementation of the one-to-one initiative. This empowered our students to think, lead, and serve.	Students will continue to add to the information available as they are developed.
Van Meter Connect Ning	Created for anyone interested in transforming education through innovation such as the 1:1 laptop learning initiative	The Van Meter Connect Ning was a place for individuals within and outside of Van Meter to connect and collaborative about a variety of topics. The 1:1 Laptop Initiative	The researcher wants to turn the Van Meter Connect Ning into a successful place of collaboration and inspiration on a variety of disciplines and subjects. The Van Meter Ning will continue to grow in

		group connected schools and individuals interested in this type of change.	members and content.
Van Meter Flowchart for Technology Assistance	Created for the Van Meter staff and students	The Van Meter Flowchart of Technology Assistance was extremely effective because it answered a lot of questions and provided support to teachers and students. The chart was posted in the classrooms and some even taped on top of teacher MacBooks.	Teachers and students will continue to refer to the flowchart when in need of assistance or questions. The researcher plans to have the flowchart put onto the desktop image of each MacBook in the future. This will also be handed out in print form each year to all teachers and posted in the classrooms.
Van Meter Library Voice Blog	Created for Van Meter students and staff to be heard in the community and around the world	The Van Meter Library Voice blog was a great way for the students and Van Meter to be heard through their new voice from educational transformation. The Voice blog was a place that students, teachers, parents, and others enjoyed	The Van Meter Library Voice blog will continue to give the library, students, and school a voice. The researcher will continue to add resources and stories to the blog. Guest will also be asked to create posts for the blog.

		reading.	
Van Meter Library Voice Google Site	Created for Van Meter students, staff, parents, community, and to be used as a resource by others around the world	The researcher taught all of the students and teachers about the Voice Google site because it contained an enormous amount of useful and essential tools. Each student and teacher had Voice bookmarked.	This digital tool will continued to grow as the researcher adds more resources to the Van Meter Library Voice Google site. It will be shared with students, teachers, parents and others in the school community in the future. It will also continue to be shared with others around the world.
Van Meter Technology Club Google Site	Van Meter students and staff	Through the creation of the Van Meter Technology Club, students have connected and gained a voice in the one-to-one initiative at Van Meter.	This site will be maintained by the Van Meter Technology Club. The researcher will assist the group with the development of this site and other resources.
Van Meter Technology Plan Wiki	Van Meter staff, parents, community, and others interested in implementation of technology into school	The Technology Committee created the Technology Plan Wiki to stay organized, connected, and as a way to share with others.	The Technology Committee will continue to add information to the wiki. They will also continue to use the wiki as a resource for collaboration.

Subpage: Van Meter Technology Artifacts	Van Meter staff, parents, community, and others in artifacts needed to implement one-to-one program into school	The Van Meter Technology Artifacts page was one shared with parents, students, and other districts often. A school must have strong policies in place first in order to have a successful one-to-one initiative.	As the Van Meter Technology Artifacts change, the researcher and committee will update the wiki. Additional artifacts will also be added.
Van Meter Think, Lead, and Serve Google Site	Van Meter staff, students, parents, community members, and to share globally with others interested in educational transformation	Being a K-12 resource, this Google site was an important in conveying the big picture to the Van Meter district and others. The site supported the change that was taking place district wide.	The Van Meter Think, Lead, and Serve Google site will continue to be a valuable resource to the district and one-to-one implementation process. The researcher will continue to add resources to it and keep it updated.
Subpage: 1:1 Laptop Initiative	Van Meter staff, students, parents, and community and others interested in implementing one-to-one laptop initiative	This page provided work, news, and other important information about the one-to-one laptop initiative and effectively supported the change at Van Meter and other	This page will continue to grow with student work throughout the years.

		schools.	
Subpage: Parent Information	Van Meter parents and others interested in educating parents through resources and workshops	By providing parents with a wealth of information through this page and workshops, they felt they were a part of the implementation process and were well informed. The researcher felt it was just as important to educate parents.	The researcher and staff at Van Meter will continue to use the information contained on this page to educated parents about digital citizenship and social networks.
Van Meter Twitter	Van Meter staff, students, parents, and community. To create connections and collaborate with others around the world	Twitter brought collaboration, connections, knowledge, and others into the progress of change at Van Meter. The effectiveness of this tool was extremely important to the success of the implementation process.	Twitter will continue to be used as a great collaboration tool for the researcher. The two names @shannonmmiller and @vmlibraryvoice will continue to be used to connect with the Van Meter school community and others around the world. Also, #vanmeter will continue to used as a voice in the transformation taking place.
Van Meter YouTube	Van Meter students, staff, parents, and	The two YouTube channels were a	The two YouTube channels will

Channels	community. To connect and share with others around the world	great way to share what was happening at Van Meter due to the one-to-one laptop initiative.	continue to be shared and added to as the transformation continues at Van Meter.

Table 4. Utility of Digital Tools Contained in Van Meter 1:1 Laptop Learning

Initiative Google Site

Change

In a technology innovation such as the one-to-one laptop learning initiative at Van

Meter Community School policy makers, teachers, students, and others involved will go

through a change in the environment such as was highlighted in the Concerns-Based

Adoption Model or CBAM. By acknowledging and addressing concerns of change one is

making a positive move in an innovation (Loucks-Horseley, 2003). By providing support

with a variety of resources the researcher assisted in the implementation of innovation

that took place within Van Meter Community School. As the researcher developed the

Van Meter 1:1 Laptop Learning Initiative Google Site, the digital tools created assisted

with the progression through the seven stages of the CBAM model (Table 5).

	Stage	Question asked in each stage	How did the products assist progress into this stage?
6	Refocusing	I have some ideas about something that would work even better?	The digital tools continued to develop as the change took place. The researcher continued to strengthen the digital tools already in place and find others that will support the growth of students and staff. The researcher also continued to develop collaborative relationships with the school

			community and others around the world. At the beginning of the school year and throughout, the researcher educated the school community about the digital tools and the support each provided. This alleviated the concerns the school community had about the tools. The school community was then able to locate and choose the different resources needed to assist with the educational transformation taking place at Van Meter. For example, Shawn Hyer, who taught junior high reading, had the reseacher come to his class at the beginning of the year to teach his students about Web 2.0 and Author Resources from the *Van Meter Library Voice Google Site*. The students were then able to use the Voice Google site independently.
5	Collaboration	How can I relate what I am doing to what others are doing?	The digital tools fostered many connections and valuable collaboration between individuals in the school community and throughout the world. The collaboration was essential in supporting the change that was taking place within Van Meter school. During the collaboration stage, teachers and students gained confidence in using the digital tools. For example, Van Meter director of teaching and learning Jennifer Sigrist, used the Van Meter Connect Ning to connect with other school district developing assessment tools in a 1:1 environment.
4	Consequence	How is my use affecting learners? How can I refine it	By sharing these digital tools with the school environment

		to have more impact?	others became excited to start learning how to develop their own. For example, students wanted to create blogs and teachers wanted to create classroom Google sites. Because of this overwhelming response, the researcher educated the school community through workshops, classtime, weekend meetings, and Skype calls. As teachers developed their own Google sites, they began to use it in the classroom and within their instruction as confidence was gained. They felt as if they were armed with effective resources and the knowledge to use them.
3	Management	I seem to be spending all my time getting materials ready.	The time spent developing the digital tools was overwhelming to the researcher at times throughout the first year of implementation. Hundreds of hours were put into developing the *Van Meter Library Voice Google Site, Van Meter Library Blog, ThinkLeadServe Wiki*, and the other digital tools included on the *Van Meter 1:1 Laptop Learning Initiative Google Site.* The researcher was excited to share these with others through workshops, email, blog posts, newsletters, and class lectures. Due to the work put into these digital tools by the researcher, teachers, administrators, and students were able to focus their attention on the teaching and learning at Van Meter. When a digital tool needed to be created for a specific task, the researcher developed the tool for the administrators, teachers,

			students, or parents. This relived the managerial concerns of these various groups.
2	Personal	How will using it affect me?	As the researcher looked at the various digital tools personal consideration was given to the choice in using them. For example, with Van Meter owning its own Google domain, the researcher thought Google Sites would be a positive platform to use for the *Van Meter Library Voice Site*. The choices given in the development of a Google site appealed to the researcher. Also, the school community was able to chose from a variety of digital resources that fit into the different teaching and learning styles.
1	Informational	I would like to know more about it.	The researcher looked at various digital tools and gather information about each one. For example, Google sites was recommended as an easy and effective way to build a website. The various digital tools the researcher developed were also an effective way to share information with the educational community. The tools could be accessed from school and home.
0	Awareness	I am not concerned about it.	Before the implementation, the researcher had not developed any of the digital tools. The Van Meter library used Destiny as a way to share online resources with patrons but no other digital resources. By creating the digital tools and Van Meter 1:1 Laptop Learning Initiative Google site, the educational

			community and others became aware of the one-to-one laptop program taking place at Van Meter. These digital tools answered questions that arose and provided resources for the educational transformation from the beginning.

Table 5. How the Products of Google Site Assisted Progress Through CBAM Stages

The *Van Meter 1:1 Laptop Learning Initiative Google Site* will extend into future

implementation stages. As Van Meter Community School progressed through several

stages of the CBAM model during the fist year of this technology innovation, the

researcher focused on Stage 5 of collaboration and Stage 6 of refocusing while reflecting

on the benefit of the *Van Meter 1:1 Laptop Learning Initiative Google Site*. The

researcher recommended that the *Van Meter 1:1 Laptop Learning Initiative Google Site*

be used within Van Meter Community School with the students, teachers, parents, and

community, because the digital tools included have fostered collaboration and

connections between a variety of audiences.

Also, the Google site will help the school community refocus and continue to

develop quality resources for a successful technology innovation program taking place

within the school district. The researcher envisioned more resources being added to the

site in order to support the continued growth and success of the program. The areas

of student work and teacher ideas are future targets for the researcher. This essential

resource will support teaching, learning, curriculum, policy writing, parental support, and

other important facets of such an initiative.

Connections Beyond Van Meter

The researcher and the Van Meter Community School made several valuable connections beyond Van Meter during the first year of the laptop initiative. By connecting with others around the world through various social networking tools, the researcher and administrative team were able to create change within the school environment through these connections.

Hsu and Sharma (2008) concluded that a technology integration would change a school environment with change agents "initiating and leading the technology change process" (p. 213). The researcher proved to be such a change agent with the tools that were created to support the one-to-one laptop learning initiative. The researcher created the *Van Meter Voice Google Site, Van Meter Think, Lead, and Serve Google Site, ThinkLeadServe Wiki, Van Meter YouTube Channels*, and *Van Meter Twitter* as a place for teachers, students, administrators, parents, and others to connect to valuable resources that would be effective in the successful implementation of the technology innovation. As Monica Hardy, an educator from Loveland, Colorado, stated in the blog post *Forward Movement* on her #You Blog blog, "I must say…I truly admire the progress Van Meter is making. Especially when they are doing it with such grace. It is a joy each time I see a tweet from one of them, and it's got the #vanmeter hashtag, their super's twitter name @johnccarver, their high school principals twitter name @derondurflinger, and their amazing librarian's twitter name @shannonmmiller. It's like watching the Walton's (meaning-they know how important relationships are) move toward a better world. How could you not want to follow?" (Hardy, 2010)

The researcher and Van Meter Community School shared the Google site with

other districts in Iowa and around the world who were implementing similar one-to-one

laptop learning initiatives into their schools who also found the resources created in this

project useful. As the researcher and other staff members of Van Meter Community

School present to various groups in Iowa and the United States, this Google site will

serve as a culminating resource to be used to show all of the resources used at Van Meter

as a successful laptop program was implemented into the district. These districts may use

the resources and replicate or change them to fit their needs. As they collaborate and

create with others new information will be gained that will be beneficial to the growth of

the one-to-one program.

The researcher presented at the Iowa 1:1 Institute on April 7, 2010 with a group of

five Van Meter students. The researcher used the Web 2.0 tool bit.ly (http://bit.ly/) to

shorten the url of the Google site to http://bit.ly/vanmeter1to1change . This url was put

on business cards and handed out to over 200 conference participants that day. The

researcher also used Twitter as a way to share the Van Meter 1:1 Laptop Learning

Initiative Google site with conference participants and others by using Twitter hashtag

#i11i (Iowa 1:1 Institute).

After the institute, Wes Fryer, a leading digital learning consultant and author of

the Moving at the Speed of Creativity blog, wrote a reflection on the presentation entitled

Be The Change You Want To See In Schools by Shannon Miller #vanmeter #i11i

(library perspective) (Fryer, 2010). This post shown in Figure 48 was included at the

bottom of the Iowa 1:1 Institute page of the Van Meter 1:1 Laptop Learning Initiative

Google site. Fryer's post was another way for others to connect with the *Van Meter 1:1*

Laptop Learning Initiative Google Site.
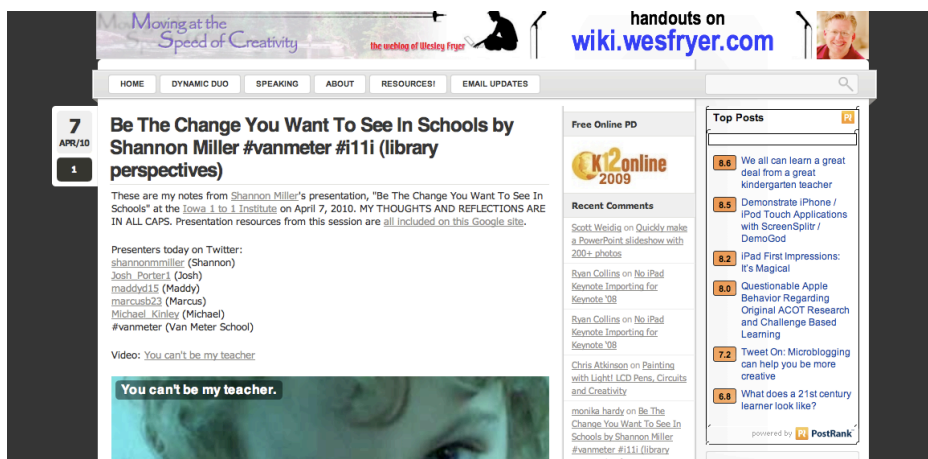
Figure 48. Wes Fryer's Moving at the Speed of Creativity Blog April 7, 2010

When John Carver, Van Meter superintendent, Deron Durflinger, Van Meter secondary principal, and the researcher presented the keynote presentation at Teachmeet Nashville the Google site was shared through the #tmn10 Twitter stream as shown in Figure 49 from the Teachmeet Nashville Computing Education wiki.
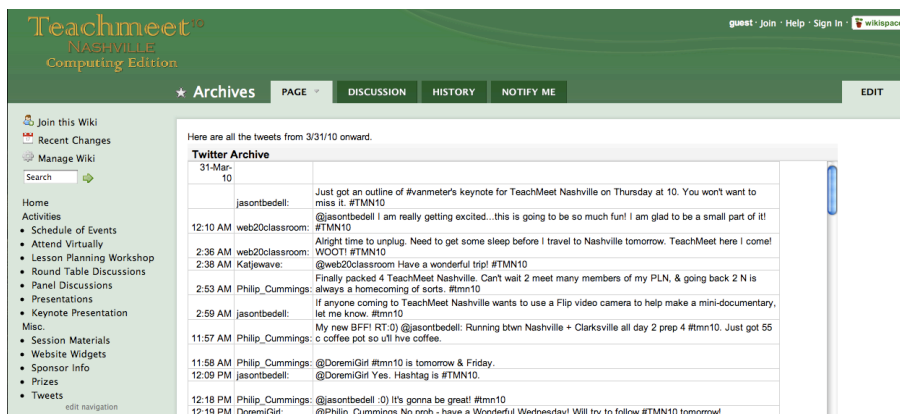
Figure 49. Teachmeet Nashville Computing Education Twitter Achieve

The *Van Meter 1:1 Laptop Learning Initiative Google Site* was also included on the Teachmeet Nashville wiki on the Keynote Presentation page under the link entitled Van Meter Presentation Materials as shown in Figure 50.
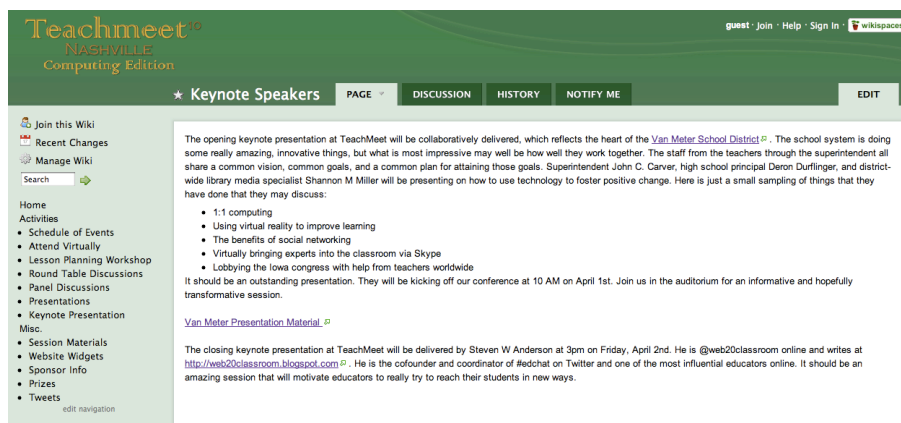
Figure 50. Teachmeet Nashville Computing Education Keynote Speakers

The *Van Meter Voice Blog* and *Van Meter Connect Ning* were places to connect and collaborate with one another and others involved in such initiatives as they went through the innovation. Malcolm Bellamy's Learning Blog post entitled *The Van Meter Library Voice Blog* stated, "In Shannon Miller, the Van Meter Schools (Elementary and Secondary) have found a passionate advocate of the power of the student voice. She has put together a wonderful blog for her students with many links that will extend their learning. She, and the school have also not been afraid to reach out and grasp the potential of social media networking to develop their students" (Bellamy, 2010). The students and teachers were given places to share their voice and work through the *Van Meter Think, Lead, and Serve Google Site* Student Work page, *ThinkLeadServe Wiki* Student Work page, *Van Meter Library Voice Blog*, and *Van Meter Library Voice Google Site* Student Work page.

The findingDulcinea Blog post entitled *Librarians: They're Just Like You)No, Really-They Are* stated, "The adage 'children should be seen and not heard' has been made redundant in most libraries. The new philosophy is active listening and learning. Shannon McClintock Miller, a librarian at Van Meter High School in Iowa, recognizes

that some of her students know more about computers than the teachers do. So she

started a group called C.E.W.L. (Computer Efficiency Workers League), the schools'

own Geek Squad" (findingDulcinea, 2010). As a leader in this technology innovation the

researcher listened to the staff and students to create the Van Meter C.E.W.L. Student

Group and Flowchart for Technology Integration (Figure 30) to provide valuable support

to all involved in the laptop learning initiative. Also, the Van Meter Technology Club

was created to give students a place to connect to their passions within their learning

community at Van Meter and throughout the world.

Recommendations for Future Projects

Three recommenations for future projects emerged from this project related to

the implementation of a one-to-one laptop learning initiative within a school community.

First, to successfully implement a change into an environment a team must be in place to

develop, support, and conduct the change. At Van Meter, the change team consisted of

the administrators and researcher. This team worked closely to provide support

throughout the school environment by creating professional development, educational

opportunities for students, resources, and workshops for parents. This team not only

presented within the school community, but also personally and digitally supported

change in presentations throughout the United States. The connections that the team

made through these opportunities were valuable to the local school community and

brought a variety of resources to teachers, students, and parents.

Secondly, there must be an individual in place to locate and share a variety of

digital resources with the staff, students, and community. The researcher took on this

role by developing the digital tools found on the *Van Meter 1:1 Laptop Learning Initiative Google Site.* Using several social networking tools such as Diigo, Twitter, Posterous, blogs, wikis, Nings, and Facebook, the researcher was able to collect and share quality and valuable resources on a variety of subjects that supported the change taking place at Van Meter. Also, the researcher educated the staff and students about these resources and tools during class time, in after school workshops, and even impromptu weekend meetings at coffee shops and homes. The Van Meter Secondary Principal told Iowa Library Association members at the spring conference that the researcher was an essential and irreplaceable part of the educational transformation taking place at Van Meter. Without this professional engagement in the initiative, an implementation such as the one-to-one laptops would not be possible.

Thirdly, the researcher would have begun gathering resources and developing digital tools before the laptops were in the hands of the students at Van Meter. She would have especially started the development of the *Van Meter Library Voice Google Site* in light of the amount of time this resource took during the first year of implementation. The researcher also would have educated the staff about these various digital tools and resources before the rollout of the laptops so they also would have been more prepared and confident in using them within their classrooms and with students.

As the front page of the *Van Meter Think, Lead, and Serve Google Site* stated, "To prepare our young people in this 'new world' requires the transformation of educational systems. Van Meter was committed to doing the work to create a system that identifies and develops student's passions and strengths, empowering them to think, lead, and serve." Just as technology is ever changing, so will the *Van Meter 1:1 Laptop*

Learning Initiative Google Site and the individuals that it affects. The *Van Meter 1:1*

Laptop Learning Initiative Google Site will be a valuable and effective resource as Van

Meter Community School and others implement such a program and continue to

transform education for the 21st century learners.

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APPENDIX A

ELECTRONIC DISPLAY DOCUMENT CONSENT FORM

Electronic Display Document Consent Form
Van Meter Community School
Van Meter, Iowa

Mrs. Shannon Miller
520 1st Ave.
Van Meter, IA 50261

Permission to Use Photographs, Video Footage, and Work

Subject: Implementation of Apple One-to-One Laptop Learning Initiative

Location: Van Meter Community School

Mrs. Shannon Miller will be taking photographs and video footage to document the one-to-one laptop learning initiative implementation at Van Meter Community School from August 2009 to April 2010. If you would not like to grant her permission to take photographs and video footage of you and your property in connection with the implementation, please let her know in writing by August 21, 2009.   By not replying in writing you are granting to her the right to use and publish video footage, photographs, or work with or without your name and for any lawful purpose to document the laptop implementation as part of the requirement for completion of the Master's degree at the University of Northern Iowa.

Thanks for your assistance and cooperation in this research project.

Mrs. Shannon Miller
Van Meter Community School District Librarian

APPENDIX B

DOCUMENT CONSENT FORM

Document Consent Form
Van Meter Community School
Van Meter, Iowa

Mrs. Shannon Miller

520 1st Ave.

Van Meter, IA 50261

Permission to Use Photographs, Video Footage, and Work

Subject: Implementation of Apple One-to-One Laptop Learning Initiative

Location: Van Meter Community School

Mrs. Shannon Miller will be taking photographs and video footage to document the one-to-one laptop learning initiative implementation at Van Meter Community School from August 2009 to April 2010. If you would not like to grant her permission to take photographs and video footage of you and your property in connection with the implementation, please let her know in writing by August 21, 2009. By not replying in writing you are granting to her the right to use and publish video footage, photographs, or work with or without your name and for any lawful purpose to document the laptop implementation as part of the requirement for completion of the Master's degree at the University of Northern Iowa.

Thanks for your assistance and cooperation in this research project.

Mrs. Shannon Miller

Van Meter Community School District Librarian

APPENDIX C

VAN METER COMMUNITY SCHOOL
RELEASE OF STUDENT INFORMATION-DIRECTORY INFORMATION

RELEASE OF STUDENT INFORMATION

The following information may be released to the public in regard to any student of the school district as necessity or desirability arises: Name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous school or institution attended by the student. In addition, photographs or likeness including videotapes and other similar information may also be released.

Any student, parent, or guardian not wanting this information released to the public must make objection in writing to the Principal. It is necessary to renew this objection by September 15th of each school year or within two weeks of the student's enrollment.