

## **21<sup>st</sup> Century Classroom in the Brunswick County schools:**

### **Performance Problems and Causes**

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## Problem Statement

North Brunswick High School is located in Leland, NC. It is a mid-size, diverse high school undergoing great change. Wilmington, a rapidly growing urban center just five miles away, is causing accelerated development of this former farming community. Vast hunting lands and trailer parks are quickly becoming new golfing communities of various price ranges and inviting starter families into their accompanying neighborhoods. Not only the housing development but also retail services are multiplying many-fold. Due to the influx of retirees moving into the region, there is potential hope to harness this population for support within the school system. As a result of these changes, teachers at North Brunswick High School have had to make alterations to their teaching philosophies and changes in the normal strategies they use to meet the needs of our growing and evolving student population. Currently there are 67 classroom teachers and 854 students. These numbers in turn yield a ratio of 1 teacher per every 12.746 students.

North Brunswick High School is one of four high schools in the Brunswick County School system. Due to consistently low test scores NBHS was the only high school placed in 'Turnaround Status' by the North Carolina State Department of Instruction. During this process, which lasts for 3 years, a school develops a 'Framework for Action' plan which literally restructures the school and puts key interventions in place to improve teacher as well as student performance. The framework is designed to fulfill its motto, "A world class school under construction." Among the many plans for performance improvement, the Technology director implemented a county-wide program called '21<sup>st</sup> Century Classroom', designed and delivered by contracted consultants from Dell computers and Pearson publishers. 8 teachers from each high school were selected to participate in the year long professional development program that aims to 'transform' participants teaching into a 21<sup>st</sup> century, technology supported, problem based style.

At the beginning of the year the 21st Century Classroom teachers met and developed the following vision statement for themselves: “With the perpetual evolution of the 21st Century classroom, educators, students, and the community will all hold interactive roles. All stakeholders will be open-minded and receptive to the constant innovations and implementation of technology to prepare for a global society.”

Currently, after a full year cycle of the program, the Technology Director for Brunswick County Schools is frustrated because the 1<sup>st</sup> cohort of 21st Century Classroom teachers have made inadequate progress. There is no apparent transformation to their teaching and they aren’t ready to provide training and support for the group of teachers that will be brought in next year, according to him. The Technology Director would like for each of the 8 teachers to implement technology based instruction every week. Since the actual performance of the 21st Century Classroom is below the optimal level, the goal is to increase the number of lesson plans submitted and increase the confidence and ability of the teachers to mentor next year's teacher population. (Appendix F)

## **Organizational Analysis**

The 21st Century classroom program was initiated by the client and head of the technical department, and is also the person currently accountable for the program's success or failure. The client who is currently experiencing a performance problem is the technology director at Brunswick County Schools, Leonard Jenkins. The client's organization is the technical department of the Brunswick County School System and the operating system of this problem is the North Brunswick High School. The organization and problem have many stakeholders who are accountable and responsible for the success or failure of the program. Stakeholders include the outside contractor involved for the training sessions brought in by the school system from the Dell computers and Pearson publishing. These contractors did

mentoring, coaching, and training sessions for the program teachers. The NBHS Principal is ultimately responsible for the quality of teaching and teachers professional development in their school. The NBHS Technology Director is accountable for the program and the technology skills and knowledge of the teachers. The 'lead teacher' was chosen for more intensive training and is expected to mentor the other teachers. The remaining teachers participated in training throughout the year and are expected to show concrete evidence of their new skills, knowledge and attitudes dealing with stated objectives. (Appendix H)

The 21st Century Classroom program started last year as a pilot project. At that time all principals were informed they should chose 8 teachers from their school to become participants in the 21st Century teachers program. The North Brunswick High School principle would choose 1 lead teacher and 7 other teachers to experience the training. The 21st Century Classroom program was administered in each high school across the district by the county's Technology Advisory Committee and implemented by consultants. The committee, chaired by the Brunswick County School Technology Director, Leonard Jenkins, established the primary goal of the mission is to produce teachers who are ready to function effectively within the 21st Century Classroom.

Instead of randomly picking teachers to attend the training sessions and become 21st Century Classroom educators, all teachers were given the chance to complete a participation application. (Appendix A) Through the submission of the application the teachers provided information about various aspects of their current job. Teachers were asked to describe themselves based on three particular aspects. First being their experience integrating technology with their instructional program. Second being their experience using electronic whiteboards, student responders, document cameras, laptop carts, and LCD projectors, even though this had nothing to do with the decision making process. And finally they were asked to provide a description of why they would like to participate in this pilot

project and how they would like to see these tools create change in the learning environment. After completion of the above mentioned criteria teachers were also asked to have their principal complete a recommendation sheet.(Appendix B) This sheet stated the terms of agreement, a rating based on teaching experience by the principal, and also a rating based on technology experience by the principal. The participants made a commitment to complete each of the following tasks during the 21st Century Classroom project:

- Attend ten hours of initial training (some may have to attend up to thirty hours).
- Work closely with the Dell consultant and other pilot participants in the school to plan and share uses of the 21st century classroom.
- Meet monthly with a "study group" where each school's pilot team will study curriculum and instruction topics that relate to 21st century learning.
- Train others in the use of the tools as the pilot is expanded in the future.
- Participate in a coaching and modeling program in your classroom. You will have to coordinate with the Dell consultant and open your classroom to other teachers to view model lessons.
- Attend a three day summer retreat that will focus on integrating the 21st century tools into the curriculum.

Optimally the above mentioned requirements would be met each year and the objectives of the 21st Century Classroom program would progress into each classroom in every district school. Attending all training sessions and study groups would result in technology training which would transform the learning process for both learners and educators. Students would move from a cooperative learning environment to collaborative learning environment. Teachers would become facilitators.

Learning would be student directed and technology would be used to differentiate the instructional process. Students would be given routine opportunities to construct their own learning and project based learning would be the norm. In essence, this project aimed to transform a traditional classroom into a 21st Century learning community. As a result of the use of technology to support the curriculum, students would develop life-long learning skills. Of course, the success of this project is based upon the teachers' understanding of instructional technology training available to them.

This organization planned for success, but hasn't progressed very far. The performance problem begins within the BCS Technology department, and is centered on the 21st Century Classroom program as well as the Dell Support System. The school district wanted to guide NBHS to problem based learning and technology integration in every core subject. The 21st Century classroom program was initiated due to a lack of technology integration into the classroom. The technology director is responsible for training all district teachers and aligning the instruction with the organizational goals as well as keeping up with current technology.

## **Environmental Analysis**

There are many aspects of this organizations environment that contribute to the performance exerted by the program. Participating teachers received \$3,500 worth of equipment which included a laptop, LCD projector, wireless tablet, document camera, and multimedia cart. They were informed that at the end of the school year they would receive a \$750 stipend. Contrary to beliefs the only teacher who would receive the stipend at the end of the year would be the lead teacher. These teachers participated in yearlong staff development activities which included the following (Appendix E) :

- Online learning opportunities through [Dell.co-nect.org](http://Dell.co-nect.org) and [techrichlearning.wikispaces.com](http://techrichlearning.wikispaces.com)

- Small group staff development sessions which emphasized technology rich lesson planning
- Coaching and modeling opportunities with the consultant
- Subscription to the 21st Century Connection Newsletter

Since this program is based on a series of training sessions there were several instructional tools used. The Dell Technology Exchange website would be used to access helpful information and for frequently asked questions. A blog was established for teachers across the county to share thoughts and ideas concerning their training and implementation. Teachers were also given access to Dell.co-nect.com and techrichlearning.wikispaces.com. There would be an online course management system set up for teachers to use, which includes modules on relevant skills and knowledge. Other forms of aid came in the format of access to diverse websites and a monthly newsletter.

Although they were promised many things would take place in order to provide feedback to the progress of the program, no actions were ever taken to provide such data. During the training period there were interviews conducted with Dell consultants and the technology facilitator, however no one took the time to interview with any of the teachers who experienced the training. The blogs which were set up never received comments regarding the project by any facilitators, teachers, or trainers. There was however a series of emails sent to the participants to praise their attendance. Once implementation started there was no assessment done and no feedback provided for teachers, as well as no present incentives for performance or nonperformance.

The project was designed for one teacher to attend a training session and return to teach the other 7 selected teachers the knowledge they gained. There was no decrease in the current workload to make room for the addition to instruction that the 21st Century Classroom project had created. Teachers were given the chance to take courses on the Dell Technical Exchange website.



The members of this workforce included one (1) lead teacher to attend training sessions and seven (7) teachers to be trained by the lead teacher. Those individuals who were to be used for consultation purposes were the technology director and the high school principal. The Dell consultants possess the knowledge and skills necessary to teach the 21st Century classroom concepts to teachers. The teachers involved have the current knowledge of how to teach core subjects but are trying to change the delivery of their instruction to implement a higher use of technology. The motivation behind this project was to improve classroom performance and enhance their career opportunities, as well as increase their interest in learning new things. The expectations of teachers for this project were stated in the contract and application they signed, which also promised to fulfill those responsibilities as a 21st Century Classroom teacher. Overall the 21st Century Classroom project was set into motion to increase student performance, decrease workload, as well as infuse instruction with technology. Teachers thought they were capable of learning how to use the new technology, and were confident enough in themselves to think they could complete the program successfully.

## **Gap Analysis**

The tech director's vision for the program's outcome was a group of teachers that could mentor other teachers at NBHS.(Appendix F) This would benefit his wider organization by freeing up time and resources from his tech support people and trainers. Also, program graduates would be a model for other teachers and would benefit from their experience. They would post material for other teachers to use on the Wiki and the Dell Tech Exchange. The materials produced would be of top quality and address the need to switch to problem based learning and integrating technology skills in all areas of the NCSCOS - not just computer skills training but computer skill integrated into every subject. The program would go beyond basic use of software and hardware to advanced and technically savvy use all features.

The director desires a group of teachers who are comfortable with technology and who are willing to continue to enhance their instruction and share knowledge with peers.

Currently, teachers, after completing the program, do not meet the expectations of the technology director. Records show that only one lesson plans per teacher has been uploaded to the Dell site. Also, based on a survey (Appendix D), only 4 of 8 teachers feel confident to mentor other teachers concerning what they learned during the program. Based on interviews, he does not feel there has been a significant change in the knowledge, skills, and attitudes of the teachers.

The gap between the current level of performance and the optimal level is evidenced by the answers to the survey question about confidence to mentor and the number of lesson plans posted per teacher.

The director would like a 100% increase in teachers who are confident to mentor other teachers. And, he would like to increase the number of lesson plans posted on the Dell site to 1 per teacher per week.

## **Cause Analysis**

On the basis of the data gathered through surveys, interviews, focus groups, and documents this team has identified the most significant issues in the organization and the personnel that have contributed to this performance problem. Following are 9 identified causes:

1. It is unclear that all teachers possessed the appropriate skills or interest to carry out all required contract and project implementation functions. At the end of the year prior to implementation each teacher was asked to apply to be a part of the program. Applicants were asked to respond to 3 questions about their level of expertise with computers and other devices used in this initiative. They were also asked to describe their experience and interest in integrating technology. The applicants at the 15 other schools submitted the requested items along with

the principal's recommendation form. However, none of the teachers at North Brunswick High School complied with the instructions on the application.

2. There was a lack of alignment and accountability between the lead teacher, the principal, and the BCS Technology Director. This is evidenced by the fact that the principal at North Brunswick High School failed to complete the rating form for each applicant or get signature of approval from the Assistant Superintendent of Curriculum and Instruction. This shows a lack of project oversight at this particular school.
3. There are inconsistencies between the defined and documented roles and responsibilities for participation in the project. The lead teacher, other teachers, and the principal all felt that they had done a satisfactory job with the pilot this year.(Appendix D) However, the technology director does not agree. The fact that teachers did not participate at the level stated in the contracts they signed indicates apathy in his eyes. Teachers said that the lead teacher only called one or two meetings so they thought we were being given a break because of all extra meetings and tutoring sessions after school brought about by the turnaround process.
4. There was lack field oversight and clear expectations at this school. The principal who actually selected the participating teachers was no longer the principal at the beginning of this school year. The new principal, Mr. Grimes did not have the benefit of participating in the "buzz" about this pilot program during the previous year and he didn't know that he was supposed to help oversee the implementation and provide classroom leave time for those teachers to mentor, coach, and share with each other. The technology director sent an email to all the principals explaining this but apparently Mr. Grimes joined the faculty some time after that email.
5. The lead teacher who was responsible for project management functions and the other teachers who were responsible for specific contract functions did not effectively communicate and work

together to integrate their activities, which results in inconsistent, performance, oversight, and results. There was a lack of alignment and accountability between the lead teacher, the principal, and the BCS Technology Director. The lead teacher participated in 40 hours of staff development while the other teachers only received about 12 hours. Lead teachers were supposed to arrange for monthly meetings with the other participants to share the knowledge gained through their additional training. On the survey 50% of the teachers indicated that they did not receive enough feedback and more than 37 % of them said the feedback they did receive was not constructive. (Appendix D)

6. Ineffective project and program prioritization at this particular school in comparison to the attention the project received at other schools. Due to the demands of the Turnaround Process often times there were competing, and in some cases, conflicting guidance between programs. In addition to Wednesday faculty meetings, the entire staff met often to work on the Turnaround plan which also mandated that teachers had to offer tutoring at least 3 afternoons each week.
7. Inadequate amount of training for some specific areas of need in contract and project management. Four out of eight of the participating teachers said they did not receive enough training. (Appendix D)
8. Lack of defined benchmarks in specific contract and project management areas although teachers say they understand their contractual obligations and that certain project activities must be accomplished, there is a lack of emphasis and direction and no defined benchmarks to serve as a guide for improved performance or to assess whether activities and lessons meet a certain standard. In addition, the lack of clear expectations about the number of technology rich lesson plans desired was a serious issue. When surveyed most teachers felt that they

performed well in this pilot program. The survey indicated that more than 87% of the teachers taught technology rich lessons daily. However, they only posted 1 or 2 lessons on the website all year. The consultant from Dell and the technology director intended to quantify the success of this pilot with the number of lessons posted on the Dell Exchange website and/or the county's website. When asked, teachers at North Brunswick all said they were not aware of a particular number of lessons.

9. Lack of appreciation and compensation for all participating teachers was an issue. The stipend was only given to the lead teacher whom some of the other teachers felt did not deserve it. Perhaps if all teachers were given a monetary incentive they would have been more motivated to express their needs to the lead teacher.

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# Appendix A: PILOT PARTICIPATION APPLICATION

Brunswick County Schools  
21ST CENTURY CLASSROOM  
PILOT PARTICIPATION APPLICATION

Name \_\_\_\_\_

School \_\_\_\_\_

Current Teaching Assignment \_\_\_\_\_

Years of Teaching Experience \_\_\_\_\_

1. Highlight in bullet format your experience integrating technology with your instructional program. You may wish to highlight hardware or software expertise and/or ways you have used technology to create an engaging learning experience.
2. Highlight in bullet format any experience you may have had , using an electronic whiteboard, student responders, document cameras, laptop computer, or LCD projector. (You don't need experience with these devices to participate in the program)
3. Describe why you would like to participate in this pilot project and how you would like to see the tools change your learning environment.

**PARTICIPANT COMMITMENTS:** Your signature on this application indicates your willingness to make the follow commitments to this pilot project:

Participants agree to:

1. Attend ten hours of initial training (some may have to attend **up** to thirty hours).
2. Work closely with the Dell consultant and other pilot participants in the district to plan and share uses of the 21st Century Classroom.
3. Meet monthly with a "study group" where each school pilot team will study curriculum and instructional topics that relate to 21st century learning.
4. Train others in the use of the tools as the pilot is expanded in the future.
5. Participate in a coaching and modeling program In your classroom. You will have to coordinate with the Dell consultant and open your classroom to other teachers to view model lessons.
6. Attend a three day summer retreat that will focus on integrating the 21st century tools into the curriculum.

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Please be sure your principal completes your recommendation and submits it to Dr. Zelphia Grissett for final approval.**

# Appendix B: PRINCIPAL'S RATING FORM

Brunswick County Schools  
21ST CENTURY CLASSROOM  
PILOT PARTICIPATION APPLICATION

## PRINCIPAL'S RATING FORM

Applicant's Name \_\_\_\_\_

School \_\_\_\_\_

This teacher is applying to participate in the first pilot of our 21<sup>st</sup> Century Classrooms. Following are the commitments each participant is willing to make to this pilot:

Participants agree to:

- Attend ten hours of initial training (some may have to attend **up** to thirty hours).
- Work closely with the Dell consultant and other pilot participants in the district to plan and share uses of the 21st Century Classroom.
- Meet monthly with a "study group" where each school pilot team will study curriculum and instructional topics that relate to 21st century learning.
- Train others in the use of the tools as the pilot is expanded in the future.
- Participate in a coaching and modeling program in your classroom. You will have to coordinate with the Dell consultant and open your classroom to other teachers to view model lessons.
- Attend a three day summer retreat that will focus on integrating the 21st century tools into the curriculum.

Based on your experience with this teacher, please rate the applicant's disposition and ability to meet the participant responsibilities:

**High Level Disposition and Ability 5 4 3 2 1 Low Level Disposition and Ability**

Please rate this applicant's overall level of use of technology for high quality integration into the instructional program:

\_\_\_ **Entry**                      \_\_\_ **Developing**                      \_\_\_ **Approaching**                      \_\_\_ **Ideal/Target**

Comments: (optional)

Principal's Signature \_\_\_\_\_ Date \_\_\_\_\_

Assistant Superintendent of Curriculum, Instruction and Assessments:

Signature \_\_\_\_\_ Date \_\_\_\_\_



# Appendix C: Sample Agenda



Brunswick County Schools 21st Century Classroom  
September 10-13

## **Brunswick County Schools: September 10-13**

Teachers that participated in the 2<sup>nd</sup> cohort for the 21<sup>st</sup> Century Classroom in the Brunswick County schools will meet individually and as a whole group with Erika Ringstrom. These individual and whole group meetings are to support the lead teachers' efforts to follow their previously created vision statement.

*With the perpetual evolution of the 21st Century classroom, educators, students, and the community will have interactive roles. All stakeholders will be open-minded and receptive to the constant innovations and implementation of technology to prepare for a global society.*

## **Previous Goals from August Workshop**

1. Understand the types of resources available on the Exchange and how they can support effective classroom practices
2. Identify specific resources and materials on the Exchange that would benefit their study group colleagues
3. Develop a personal implementation plan to bring several technology rich lessons within their classrooms effectively
4. Develop a plan to meet with their study groups at least three times before the next facilitator training
5. Understand effective facilitation techniques that will support study group participants' development of technology rich lessons

## **Goals for September Individual meetings:**

1. Identify one *successful* technology integrated lesson and the lessons learned from this experience.
2. Identify one *unsuccessful* technology integrated lesson and the lessons learned from this experience.
3. Develop a technology rich lesson that can be added to the lesson bank on the Brunswick County 21<sup>st</sup> Century Website.

## **Evidence of Learning from the Individual Meeting:**

A technology rich lesson plan will be added to the lesson bank on the Brunswick County 21<sup>st</sup> Century Website and/or the Dell Exchange.

### **Goals for September Whole group meeting:**

1. Mentor teachers will reevaluate their site specific plans to lead and guide study groups that promote effective use and integration of the Intelligent Classroom
2. Individual teacher and the consultant will modify and adjust study group goals and schedule as necessary.
3. Understand the Online Course process and how to guide study group members through it
4. Develop a plan to have their study groups successfully complete the Creating Technology-Rich Lessons Online Course, including a post-implementation discussion
5. Identify additional Online Courses and online resources that would address technical and educational needs at the school level

### **Evidence of Learning from the Whole Group Meeting**

Create a facilitation plan to have their study groups complete the Creating Technology-Rich Lessons Online Course

### **Questions to consider about your study group plans when meeting with Erika on your campus.**

- What are some of your successful methods of communication that you have implemented since the August workshop?
- How has the exchange resources helped yourself or teachers to improve instruction or increase efficiency or productivity?
- If you have conducted a study group, what facilitation strategies have you included help ensure a positive group meeting?
- How has your planned timeline account for teachers' busy schedules? What adjustments need to be made?

### **Participant resources**

Dell Exchange <http://dell.co-nect.net/login>

# Appendix C: Individual Assistance Form

## Technology Integration Assistance

Ever wanted individualized attention? Well here is your chance! Erika Ringstrom will be working one-on-one with teachers to help plan, model, and reflect on technology integration strategies that work in classrooms. This is a great opportunity for you, as a teacher, to try out technology integration strategies.

### Here's how it works:

- **Session 1:** You and Erika will plan the lesson to be modeled. During this time, it is decided what roles each person will play in the lesson. This can be done in person, email, or on the phone.
- **Session 2:** Erika comes in and models or co-teaches with the teacher.
- **Session 3:** The teacher and Erika reflect on the lesson using the questions below. This can be anytime following the lesson (in person, by phone or e-mail).
  - o What technology integration strategies were observed? What went well? What could have been improved?
  - o Where the stated objectives/standards met during the lesson?
  - o How did students react to the instruction?
  - o Where was there evidence of critical thinking in the students' responses?
  - o How could the lesson be improved in the future?
  - o Where could these strategies be used in future lessons/content areas?
  - o What follow up should be done with students to ensure their mastery of the information or skill?

### What to do:

- Talk with your School Contact or Erika and sign up for dates using the attached form
- Prepare an upcoming lesson to share with Erika.
- You can contact Erika Ringstrom at [erika.ringstrom@pearson.com](mailto:erika.ringstrom@pearson.com) or 612-986-0886 with any additional questions.

### Requirements:

- During the classroom visit, you must be present and active in all observations and/or activities. As the teacher, you are responsible for discipline.
- You must commit to having a reflective-discussion regarding the students and the lesson.
- You must agree to plan a future lesson, implementing the technology in your classroom. Your consultant will assist with this, if desired. You will be asked if you would like to video tape this lesson and complete a self reflection document to share with colleagues and Erika.
- Ongoing technology integration and self reflection should be continued after this experience.

**Individual Teacher Technology Integration Assistance  
Sign Up Form**

Name: \_\_\_\_\_

Subject Area: \_\_\_\_\_ Grade taught: \_\_\_\_\_

Conference Period: \_\_\_\_\_

Potential Dates: \_\_\_\_\_

**Standards I would like to focus on:**

- 

**Technology that will be integrated:**

- 

**I'd like information/feedback on these aspects of my classroom.  
(examples: questioning techniques, meeting individual student  
needs, evidence of critical thinking, appropriate wait time, etc...)**

- 

-

# Appendix D: 21<sup>st</sup> Century Classroom Survey

<b>Survey Title:</b> 21st Century Post Survey [8 responses]
<b>Report Type:</b> Bar Graph
<b>Start/End Date:</b> 5/28/08 - 6/30/09 <b>Responses:</b> 8 <b>Status:</b> Active

## 1. Did you clearly understand the goals of the 21st Century Teacher Project?

Responses	Count	%	Percentage of total respondents					
yes	7	87.50%						
no	1	12.50%						
Other (please specify)	0	0%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

## 2.




### Do you believe the goals of the program were realistic?

Responses	Count	%	Percentage of total respondents					
yes	8	100.00%						
no	0	0%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.




4.

#### Were you given enough feedback on your progress in this program?

Responses	Count	%	Percentage of total respondents					
yes	4	50.00%						
no	4	50.00%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"><tr><td>20%</td><td>40%</td><td>60%</td><td>80%</td><td>100%</td></tr></table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				




Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

#### 5. Was the feedback you received constructive?

Responses	Count	%	Percentage of total respondents					
yes	5	62.50%						
no	3	37.50%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"><tr><td>20%</td><td>40%</td><td>60%</td><td>80%</td><td>100%</td></tr></table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				



Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

#### 6. Do you believe you were given all the tools you needed to meet the program goals?

Responses	Count	%	Percentage of total respondents					
yes	6	75.00%						
no	2	25.00%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"><tr><td>20%</td><td>40%</td><td>60%</td><td>80%</td><td>100%</td></tr></table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				



Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

**8. Consider the staff development sessions and resources provided throughout the year, were they efficiently tailored to meet your needs?**

Responses	Count	%	Percentage of total respondents					
yes	7	87.50%						
no	1	12.50%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				






Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

**9. Did you receive enough staff development?**

Responses	Count	%	Percentage of total respondents					
yes	4	50.00%						
no	4	50.00%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				




Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

**11. Throughout the year how often did you teach technology rich lessons?**

Responses	Count	%	Percentage of total respondents					
daily	7	87.50%						
weekly	1	12.50%						
monthly	1	12.50%						
quarterly	0	0%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>9</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

**12. Do you believe you are ready to successfully mentor another 21st Century teacher next year?**

Responses	Count	%	Percentage of total respondents					
yes	4	50.00%						
no	4	50.00%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.



### 13. Do you believe you performed well in the 21st Century project?

Responses	Count	%	Percentage of total respondents					
yes	8	100.00%						
no	0	0%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

### 14. If you knew more concepts and specialized skills do you feel that you would have performed better?

Responses	Count	%	Percentage of total respondents					
yes	8	100.00%						
no	0	0%						
(Did not answer)	0	0%						
<b>Total Responses</b>	<b>8</b>		<table border="1"> <tr> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table>	20%	40%	60%	80%	100%
20%	40%	60%	80%	100%				

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

### 15. Were there job aids and quick references available to support your performance?

Responses	Count	%	Percentage of total respondents
yes	5	62.50%	
no	3	37.50%	
(Did not answer)	0	0%	

<b>Total Responses</b>	<b>8</b>		<b>20%</b>	<b>40%</b>	<b>60%</b>	<b>80%</b>	<b>100%</b>
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Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

### 16. Are you confident in your ability to learn the concepts and skills for good performance?

Responses	Count	%	Percentage of total respondents
yes	8	100.00%	
no	0	0%	
(Did not answer)	0	0%	
<b>Total Responses</b>	<b>8</b>		<b>20%</b> <b>40%</b> <b>60%</b> <b>80%</b> <b>100%</b>

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

### 17. Are you motivated to continue with this program?

Responses	Count	%	Percentage of total respondents
yes	8	100.00%	
no	0	0%	
(Did not answer)	0	0%	
<b>Total Responses</b>	<b>8</b>		<b>20%</b> <b>40%</b> <b>60%</b> <b>80%</b> <b>100%</b>

Multiple answers per participant possible. Percentages added may exceed 100 since a participant may select more than one answer for this question.

# Appendix E – Program Timeline

May 2007	21st Century project teachers were selected by the principal. Teacher's uploaded bios on 21st Century Teacher web page and given access to a page to post lesson plans throughout the year.
August 2007	1 lead 21st Century teacher participated in week long staff development with Dell consultants. The other 7 teachers were given one-day training on their new equipment. Email was sent to principals reminding them the lead teacher received substantial staff development and that he would need extra time to help develop the other 7 teachers throughout the year. A blog was set up for these teachers to share with others across the county. Teachers were given access to Dell.connect.com and techrichlearning.wikispaces.com . The Technology Director visited the school to provide point of need assistance.
September 2007	Director asked for Feedback from participating teachers. Staff development provided on developing technology rich lesson plans by Dell Consultants. The consultant visited classrooms to provide individual coaching and modeling.
October 2007	More coaching and modeling from consultants
November 2007	Participants given subscription to 21st Century Connection Newsletter. Due to requests from participants more support was given on using the digital camera
February 2008	Consultants provided more staff development on technology rich lesson plans
March 2008	Consultant sends email to participants asking "Are you transforming your teaching?"
May 2008	Participants are concerned about not receiving proper ceu's.

# Appendix F – Interview with Tech. Director

## Interview With Technology Director on 5/23/08

*In your school, in what ways do you see teachers delivering lessons? What tools do you observe them using?*  
Daily, I see teachers using document cameras, laptops, LCD projectors, and Interwrite Tablet

*In what ways do you feel teachers could benefit from a district-wide professional learning community? How do you think technology might facilitate this?* Next year the technology department will take the lead on this. We're going to model how beneficial a professional learning community can be.

*In what ways, have you observed, teachers utilizing communicative and/or collaborative technology with students?* Some teachers collaborate with students through email and others through Google Docs. However students can only access google docs from home.

*What technology have you seen them using?* They use the hardware I mentioned earlier and instructional software such as SuccessMaker and Study Island and they use Microsoft Office

*What technology would you like to see them use more frequently?* I'd like to see them use all of it more frequently.

*What obstacles, do you feel, teachers encounter when using, or attempting, to use these tools?* Our teachers simply teach applications instead of teaching technology concepts. Their methods are very one-sided. Whatever technology they're using they only show one facet of it to students. Instead of supporting the NCSCOS with MSWord they just teach students the features and functions of Word processing that they are most comfortable with.

*What technologies do you feel are most relevant to teachers in their classrooms?* I believe all the technology is relevant but teachers resist change. They only consult the NCSCOS for reading, math, science, and SS. They aren't familiar with the any computer skills objectives and they don't consider all the tools they have at their disposal as they plan. Universities are partly to blame because they still prepare teachers the same way they did 20 years ago. Our teachers were given access to PD360 this year but it's something they don't use.

*How, do you feel, can the district encourage the use of these tools in the classroom?* It's going to have to come from the top and go down. Expectations need to be communicated and then administrators need to follow up and monitor to see that it's being done.

*Do teachers need more staff development? No*

*Is attendance at staff development sessions a problem? No, they attend. They just won't apply the concepts.*

*What tools do you feel have been well-covered in previous staff development initiatives? This year we provided more focused staff development than ever. Six teachers at each school were selected to be 21st Century Lead teachers. They were given a multimedia cart with a laptop, projector, doc cam, and interwrite tablet. They were also given outside consultants who worked with them throughout the year to transform their teaching and help them integrate technology. They had access to the Dell Exchange for On Demand staff development and we gave them a space on the exchange to share lesson plans. They also had wikispaces to collaborate. These lead teachers only posted one or two lesson plans for the whole year. Do you know why? They knew they weren't integrating the technology as they should and they were afraid of being "found out". They know the most basic functions of their equipment and software but that's it. Sometimes I feel like all we did was replace a \$300 overhead projector with a \$3,500 multimedia cart. They aren't doing any more with the cart than they did with the overhead projector. At this point these "lead teachers" aren't even ready to mentor the next group of teachers who will receive this equipment next year.*

*Why do you think the 21st Century Lead Teacher Initiative was not as successful as you would have hoped? Teachers are lazy. They want to follow lesson plans but they don't plan lessons. They don't seek resources outside of what's suggested in their teaching manuals. Teachers resist change. They want to do it the way they're most comfortable with. They don't look for ways to enhance instruction with technology.*

*Do you think that your lead teachers needed this first year to learn about the equipment and that next year the consultant will be able to move them to another level of integration and planning? No*

*Were they given ample time with the consultant this year? Yes, time is just an excuse that teachers use. Apathy is another reason why they don't do anymore than they've been doing.*

*Do you think rewards or incentives would have helped? No, because they received all the equipment they needed and I'm preparing to issue their \$750 stipends for being lead teachers this year and it didn't make a difference.*

*How well do you think teachers understand the following terms? blog, streaming, web 2.0, wiki, podcast, digital divide, web browser, FTP, instant messaging, and plugin? On a scale of 1-10 they are probably at a 1.*

*Are there any issues regarding technology professional development that you feel have not been addressed in the previous discussion? I think we've covered it all.*

# Appendix G – Focus group with tech support

## Focus Group with Technician/Trainers 5/23/08

As technicians /trainers for BCS how do you support teachers and technology? We respond to workorders and requests from teachers and administrators to repair their computers, troubleshoot software issues, move equipment set up labs, etc.

Do you provide any staff development for teachers? We were responsible for training all employees on how to set up and maintain a webpage and as usual the principal had to force them to attend the training and when they got there they didn't even pay attention long enough to learn anything. They were talking about their students, checking their email, and grading papers. Of course, since then they will put in workorders for help with their webpages or stop me in the hall for help but I tell them they should have paid attention during the training.

So how can teachers get help with this? I put the manual on our network and I refer them to that.

Do you think that is equally effective? Yes, if they actually took the time to read it. Before we moved to Office 2007 I gave teachers access to documents to help them transition but they didn't even access it. Instead they just ask me to show them how to do it.

They do the same thing with any new program. They put in workorders and call the district office and complain that they can't teach effectively without a particular piece of hardware or software. But most of the time once I install a program they have no idea how to use it and they expect me to learn it and then teach them. It's usually something they saw at a workshop or something and they think it's going to solve so many problems for them.

A teacher kept insisting that she needed 3 more computers and a document camera in her room. Later I learned that she only wanted the equipment for an activity that only lasted about an hour.

For years teachers have said they want to be able to collaborate with students. We set up collaborative storage for them and only 1 or 2 teachers at some schools even use it. The instructions for how to use were simple enough to put in an email and they still don't use it.

Do you think another platform for staff development would be more effective? No, they have PD360 which is available anytime anywhere and they don't use it. I put together a beginning of the year technology orientation for teachers to show them how our network functions, what new software is available, how to use their groupwise accounts to make their lives easier, how to submit a workorder, how to use the technology available in each classroom etc. Every teacher I talked to said they really needed something like that. The principal said the only way to get them to stay after school for something like that would be if we could pay them. I offered it anyway and not one teacher stayed.



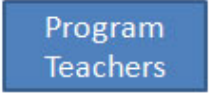




Yeah teachers are lazy and say they're not staying for training unless they can get credit or money.

I emailed teachers to see who would be interested in learning more about Web 2.0. About 15 teachers responded via email to say they wanted it. Many others stopped me in the hallway and said they interested. Only 3 of those 30 teachers actually showed up and there were a few more from other schools who showed up as well.

Do you think attendance and overall success of staff development would be more effective if teachers were give stipends? They say it would make a difference but I don't know.

Is there anything else you would like to add? *It's very frustrating for us.*

## Appendix H – System Map

	Brunswick County	North Brunswick High School	Training Contractors
Primary Stakeholders		  	
Secondary Stakeholders		  	
resources	<p>Technical Support Leadership</p>	<p>Hardware and Software Classrooms Community Management</p>	<p>Dell Tech Exchange Website Coaching</p>