Increasing Student Performance: North Carolina Online Test of Computer Skills

Systemic Performance Improvement Proposal

7/26/2006

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Executive Summary

This performance intervention project focuses on student scores on the North Carolina Online Test of Computer Skills in the Pender County School district. This year the system, like many other systems in the state, saw a significant drop in scores on this test in both the first administration as well as the retest. This was the first year of implementation of the online format of the test and the new curriculum, updated in 2004. Previously, the students in this county were scoring above 91.7% proficient system-wide. The system administrators saw a drop to an average of 58% and would like to see an increase to previous levels in the coming years.

This proposal suggests a three-phase intervention plan designed to raise the scores by increasing awareness, communication and technology skills integration into the core curriculum areas (Language Arts, Mathematics, Social Studies and Science). The first phase of the plan focuses on the creation of a curriculum document outlining the specific skills to be taught at each level as

well as putting in place systems of communication and student support. The second phase focuses on a professional development initiative for teachers focused on using the document to plan technology integrated units, lessons and projects. This phase also includes changes in county policy to ensure that proper measures will be implemented in order to facilitate students' passing the test prior to entering high school. The third and final phase of this plan focuses on the hiring of more personnel to facilitate more collaboration at each school to further enable teachers to continue with an integrated approach as well as establishing a more flexible system of student access to school computers.

This plan should be implemented in phases in order to ensure that the proper procedures and policies are in place. Each phase of the implementation will be formatively evaluated and must show overall success before moving on to another phase. After implementation of this intervention plan, a significant increase in knowledge and skills of the teachers and students will be realized by the system. The final evaluation of the implementation project will be an increase in student performance on the North Carolina Online Test of Computer Skills as shown by the overall percentage of passing scores.

Section 1: Perceptual Analysis

This year, the Department of Public Instruction introduced a new computer-based online testing environment for the eighth grade Computer Skills Test. The test was field-tested two years ago and administered for the first time last year with quite a few bumps, but was seen as a success from the perspective of the state. The testing system reported that over 90% of the students who started the test actually finished.

Unfortunately, the only success was in the technological administration and not the performance of the students. The state average pass rate was 69%, down from 80.9% in 2004-2005. The scores for Pender County Schools dropped from 91.7% proficient to 58%. The teachers and administrators are very concerned about this, since the test is directly tied to incentive pay and overall performance. The schools did retest and only one school had more students pass the retest than fail. Many administrators insist that this is a problem with the test, stating that the required reading level was too high or that the test was simply too hard. The Superintendent insists that if one school can make gains, all should be able to do the same.

In 2004, the state curriculum was revised to meet more relevant standards for student competence in Computer Skills. Although the curriculum was revised, the test remained the same for two administrations. This test consisted of one multiple-choice section, assessing vocabulary, ethics and general knowledge of types of computer systems. The second part of the test, referred to as the Performance section consisted of three documents – one desktop publishing, one prepared database and one prepared spreadsheet. The students were asked to manipulate each of these according to the directions and print out a final copy of their work. The digital files were reset and discarded at the end of the testing session. Only the hard copies and the workbooks with specific answers were sent for grading. It focused on basic skills of manipulating these three documents. It did not measure how the student arrived at his/her final product, only the product itself.

The new test evaluates the students' application of these skills as well as their process in manipulating the program. It is a Java-based application that embeds both multiple-choice questions and performance items side-by-side. There is no distinction between the two types of skills and it is not uncommon for multiple skills to be measured in one question. Students' movements are recorded and their answers are based on how they performed the actions as well as their final answer. This requires students to apply their skills to the multiple realistic problems they are given within the test.

The stakeholders in this project are the teachers, principals, students and parents of Pender County Schools' four middle school programs. This initiative is directed at the middle schools because the test is administered each year to

eighth grade students. The teachers and principals will welcome improvement in this area because the test is directly related to North Carolina's ABC Teacher Incentive Program, which rewards schools for meeting and exceeding goals. This year, many teachers will receive lower monetary rewards because of the students' performance on the Computer Skills Test. The teachers and principals will, however, resist this initiative if it imposes on their instructional time without integrating with their already established curriculum goals and objectives. Time is a critical issue for both these parties.

This test is also a graduation requirement. According to state graduation standards, every student in North Carolina public schools must be deemed competent on the Computer Skills Test. If they pass it in the eighth grade, students have already met one graduation requirement. Parents and students will see this proposal as needed because of this rule.

The State and county board of education also believe that computer education is a necessary component of a free and public education, as outlined in their curriculum objectives and past technology-based initiatives. It is the belief of the Superintendent, curriculum directors and other administrative personnel that the Computer Skills curriculum should not be taught independently of the other core curriculum areas. To assist in this, a county-wide Instructional Technology Coordinator is employed. It is his duty to assess, design and develop a plan to correct this performance problem.

Section 2: Analysis of System Performance

Purpose

The purpose of this project is to develop a plan to increase student performance on the North Carolina Test of Computer Skills. This is a new online version of the test and the students scored considerably lower on the test this year than in previous years.

In the 2005-06 school year, 249 students out of 597 failed the initial test. Of these students 105 passed the retest. One school had a pass rate of 93% after the retest. This school also has the highest percentage of students proficient on the state reading test, but has the least amount of access to computers within the school building, being the only school without federal government assistance. The other schools averaged a 57% pass rate.

Current Situation Narrative

Organizational Systems

There are 5 middle school programs in Pender County Schools. Each school employs at least one computer skills/business education teacher. Two schools employ two teachers. Every student in the district is required to take an elective Computer Skills course centered on the targeted curriculum. This class is usually taken by a student in his/her sixth or seventh grade year. The test is given in November of eighth grade. Although the test is a requirement for high school graduation; it is not a requirement to pass the eighth grade. Students who fail the test in November are given an opportunity to retest in February.

In the school with the highest pass rate, students reviewed the Computer Skills curriculum in their core curriculum classes [Language Arts (LA), Math (M), Science (Sc.), and Social Studies (SS)]. The curriculum was split into parts: Databases (Sc/SS), Spreadsheets (M/Sc), Vocabulary (LA), and Desktop Publishing (LA). This ensured that the students would receive some type of review. In the smaller schools (3), eighth grade students are automatically placed into the Computer Skills class. The other large middle school had no formal review of the skills, although eighth grade students were taken to the lab and "walked through" the online platform prior to the test. The first school had a 69% pass rate for its students on the initial administration. The others were below that mark.

For the retest, each school had a different strategy. The top performing school set a plan that included reorganizing the elective schedule so that the lowest scoring students received the most remediation. These students were removed from both of their elective courses and placed with the computer teacher each

day for two weeks. The mid-range students were placed with another during one of their elective courses every other day for the same two weeks. The students who were within five points of passing were given peer tutors to review them for the test. The tutors were chosen among the top performing students in the class. This school, although the exception, only had sixteen students not proficient on the retest. This was a 23% increase in their pass rate.

One other school had a dramatic increase, although not as impressive as the previous example. This school focused on all students who did not pass the test and offered remediation with the computer teacher for one week.

None of the other schools had a significant number of students pass the retest. One school held a two-day review with the students and another did not bother to remediate the students at all. One strategy that was interesting was one school that decided to only review students who were greater than five points from passing and did not remediate those greater than fifteen, considering it a "waste of time." The reasoning was that the ones who were within five points would pass because of having seen the test previously. In this case, the statistical theory used by the planners did not prove to be effective.

Management Systems

The North Carolina Online Test of Computer Skills is written and mandated by the North Carolina Department of Public Instruction with the authority of the State Board of Education and ultimately, the Governor and General Assembly. Individual counties, led by Superintendents, employ a Director of Testing and Accountability to oversee and coordinate the testing process with school administrators.

The curriculum is written at the state level and passed down to the counties to teach. It is mandated that the curriculum is taught and tested, but it is not defined the manner in which it is delivered. This is decided within individual counties. For this test, the Instructional Technology Coordinator attended a summer seminar about the changes to the test. He held a meeting at the beginning of the year to update one contact from each school about the new testing process. He suggested that the students be given every opportunity to review for it within their core content areas. This information was then taken back to the principals at each school, who are ultimately the instructional leaders. They made decisions regarding the approach to the test. All of the principals, not knowing exactly what to expect, kept to their previous approaches. These had brought them success in the past. After receiving the test and retest results, all agree that a different strategy is needed.

Physical and Technical System

In this area, three of the five schools are well-equipped with up-to-date computers and working computers in every classroom. To perform

demonstrations, the schools had an average of less than ten data projectors, ranging from six to ten in each school. The lowest number of computers per classroom was in the school with the highest scores. In every school, the eighth grade teachers were given computer lab priority. In the weeks prior to both tests, eighth grade teachers and students were directed to use the lab. Other grade levels understood that use of the computer lab was prohibited unless eighth grade teachers did not need it that day. In all schools, there is a shortage of data projectors, ranging from six to ten per school. From conversations at all schools, eighth grade teachers utilized the lab 85% of the time in the weeks surrounding both tests. In the high scoring school, it was reported that the lab was used by eighth grade teachers 90-95% of the time, as mandated by the administration.

Human and Social Systems

One difference that is highlighted by lower performing schools is that access to technology at home in the high performing school is much greater since the socioeconomic status is greater. The reading proficiency level in this school is also higher than the others. This school does not, however, receive federal funding as the others do. Many times this funding is used to purchase additional equipment for students to utilize. These funds are also used to pay teachers for after-school tutoring in other areas subjected to state testing, purchase staff development and purchase items for assessment testing.

Currently, teachers are offered and mandated to participate in professional development dealing with enhancing technology skills. Two years ago, when the new Computer Skills curriculum was introduced, they were required to attend a workshop in which they developed integrated lessons utilizing the new objectives and their own subject areas. This was an attempt to develop a database of integrated lessons for the teachers of Pender County Schools, although the lessons were deemed inferior and the document was never created. While many teachers utilize technology skills in their lessons, many do not specifically focus on the skills of the Standard Course of Study. Another group of teachers, through interviews and surveys, assess their technology skills to be “poor.” This is most certainly an obstacle in the mainstream delivery of integrated content.

Comparison of Optimal Performance and Initial Gap Analysis

Systems	Current Situation	Optimal Situation	Gap
Organizational Systems	Computer Skills content is taught through Business education class offered in grades six through eight (offered to student once during this time period)	Computer skills curriculum taught in all are programs of study (LA, SS, Sc, M)	There is not a direct focus on the integration of Computer Skills Curriculum in the school strategic planning.
	Delivery method varies from school to school	Standard delivery method for all schools	Teachers do not have a common language that includes the Computer Skills curriculum.
	Over 200 students going to high school having not passed test	All students passing Computer Skills test in eighth grade	Strategy/incentive for students to pass test.
	Two schools see success in retest	All schools above 95% proficient in retest	Number of proficient schools must be analyzed and targeted.
	One school aligning curriculum into core classes (LA, M, Sc and SS)	All schools align Computer Skills curriculum with objectives of core curriculum areas	Schools need method of aligning these two curriculum areas.
Management Systems	Test is mandated by NCDPI, passing is necessary to graduate high school	County standard that all regular education students pass (exception: students on Occu-Prep High school track)	County policy revision needed.
	Curriculum is written at state level, organized by goals and objectives by grade level	County strategies written to specify goals for each grade level	Curriculum document restating goals and objectives into specific skills that learner will attain at each grade level must be developed.
	Testing process/procedures split between Accountability and	Merging of these departments and training for all involved in	Reorganization of central office personnel.

	Technology Departments	testing in both administration and content	
	Meeting held to discuss updates to testing	Meetings held to update targeted group on testing procedures and curriculum changes early in school year	More effective training must be implemented.
	New curriculum tested, old procedures used for new online test	Focus on new curriculum objectives and test format	Not enough teachers are familiar with specific objectives of revised Computer Skills curriculum.
Physical and Technical Systems	Three of five schools up-to-date computers in every classroom	All schools with ample number of computers designated for student use	Computers in all classrooms are not equipped with the technology needed to perform test question examples.
	Less than ten data projectors in each school	All middle school classrooms equipped with data projectors	Few classrooms are able to project examples of problems that will be presented on test.
	One computer lab in each school open for curriculum area teachers	More than one place for multiple students to practice computer skills through integrated projects	Not enough computers are utilized for preparing the students for online computer skills test.
	Labs reserved for eighth grade students prior to testing	All school computers reserved for eighth grade students during weeks leading up to test	Labs are good for one class at a time, leaving out a significant number of students each day.
	Schools report 85-95% lab usage during this reserved time period	100% of computers in school utilized for student projects integrating Computer Skills curriculum	All computers in school should be used during this intensive review.
Human and Social Systems	Access outside of school greater for one of five schools (socioeconomic status)	Computer time is given for students with less access outside of school to access computers	Lower SES students are not being provided an opportunity to practice skills outside of the school day.

	Unorganized workshop held prior to release of new curriculum for teachers to review and plan lessons, objectives not clearly stated	Workshop given to all middle school teachers to discuss and plan curriculum alignment and possible projects	Teachers are not offered collaborative planning sessions for creating integrated projects directly linked to the Computer Skills test.
	Failed attempt at creating a database of integrated lesson plans for teachers	Teams of teachers at middle school level plan	Training for teachers should have specific learning objectives with examples of expected products.
	Wide range of teacher computer skill level, many teachers rate their computer skills as “poor”	Teachers will have knowledge and skills to design, develop and implement lessons dealing with Computer Skills curriculum	Training for teachers is not focused on skills that are needed to plan for and teach the Computer Skills test.
	Computer Skills Test viewed as a “middle school problem”	Computer Skills curriculum taught at all grade levels prior to middle school	The importance of the Computer Skills curriculum must be realized by teachers, parents and students at all grade levels.

Section 3: Performance Gap Analysis

	Current Situation	Optimal Situation	Type of Gap	Gap
Organiz-ational Systems	Computer Skills content is taught through Business education class offered in grades six through eight (offered to student once during this time period)	Computer skills curriculum taught in all are programs of study	Lack of Motivation, Lack of knowledge, Flawed environment	There is not a direct focus on the integration of Computer Skills Curriculum in the school strategic planning.
	Delivery method varies from school to school	Standard delivery method for all schools	Flawed environment	Teachers do not have a common language that includes the Computer Skills curriculum.
	Over 200 students going to high school having not passed test	All students passing Computer Skills test in eighth grade	Lack of incentives	Students are not passing test prior to high school.
	Two schools see success in retest	All schools above 95% proficient in retest	Lack of incentives	Number of proficient schools not analyzed or targeted.
	One school aligning curriculum into core classes (LA, M, Sc and SS)	All schools align Computer Skills curriculum with objectives of core curriculum areas	Lack of skill/information	No method of aligning curriculum areas to Computer Skills curriculum.

Manage-ment Systems	Test is mandated by NCDPI, passing is necessary to graduate high school	County standard that all regular education students pass (exception: students on Occu-Prep High school track)	Lack of incentives	No county policy on passing Computer Skills test in eighth grade.
	Curriculum is written at state level, organized by goals and objectives by grade level	County strategies written to specify goals for each grade level	Flawed environment Lack of information	Curriculum document restating goals and objectives into specific skills that learner must attain at each grade level does not exist.
	Testing process/procedures split between Accountability and Technology Departments	Merging of these departments and training for all involved in testing in both administration and content	Flawed environment	Central office personnel not collaborating.

	Meeting held to discuss updates to testing	Meetings held to update targeted group on testing procedures as well as curriculum changes early in school year	Flawed environment, Lack of skills/information	Ineffective training structure for those involved in testing.
	New curriculum tested, old procedures used for new online test	Focus on new curriculum objectives and test format	Lack of information/skills/ knowledge	Teachers are not familiar with specific objectives of revised Computer Skills curriculum.
Physical and Technical Systems	Three of five schools up-to-date computers in every classroom	All schools with ample number of computers designated for student use	Flawed environment	Computers in all classrooms are not equipped with the technology needed to perform test question examples.
	Less than ten data projectors in each school	All middle school classrooms equipped with data projectors	Flawed environment	Few classrooms are able to project examples of problems that will be solved on test.
	One computer lab in each school open for curriculum area teachers	More than one place for multiple students to practice computer skills through integrated projects	Flawed environment	Not enough computers are utilized for preparing the students for online computer skills test.

	Labs reserved for eighth grade students prior to testing	All school computers reserved for eighth grade students during weeks leading up to test	Flawed environment	Labs are good for one class at a time, leaving out a significant number of students each day.
	Schools report 85-95% lab usage during this reserved time period	100% of computers in school utilized for student projects integrating Computer Skills curriculum	Flawed environment	All computers in school should be used during this intensive review.
Human and Social Systems	Access outside of school greater for one of five schools (socioeconomic status)	Time is given for students with less access outside of school to access computers	Flawed environment Lack of skills/knowledge Lack of motivation	Lower SES students are not being provided an opportunity to practice skills outside of the school day.

	Unorganized workshop held prior to release of new curriculum for teachers to review and plan lessons, objectives not clearly stated	Workshop given to all middle school teachers to discuss and plan curriculum alignment and possible projects	Flawed environment	Teachers are not offered collaborative planning sessions for creating integrated projects directly dealing with the Computer Skills test.
	Failed attempt at creating a database of integrated lesson plans for teachers	Teams of teachers at middle school level plan	Flawed environment Lack of skill	Training for teachers should have specific learning objectives with examples of expected products.

	Wide range of teacher computer skill level, many teachers rate their computer skills as “poor”	Teachers will have knowledge and skills to design, develop and implement lessons dealing with Computer Skills curriculum	Flawed environment Lack of skill/knowledge	Training for teachers is not focused on skills that are needed to plan for and teach the Computer Skills test.
	Computer Skills Test viewed as a “middle school problem”	Computer Skills curriculum taught at all grade levels prior to middle school	Flawed environment	The importance of the Computer Skills curriculum must be realized by teachers, parents and students at all grade levels.

Narrative of Gap Analysis

From the "Gap Analysis," several common issues arose: (1) several instances of a flawed environment, (2) lack of relevant skills and knowledge on the part of the teachers and students, and (3) a lack of incentive or motivation for students to pass the test prior to entering high school.

Organizational System Gaps, Causes and Costs
This area contained all areas of gaps between the current and optimal performance. Due to the content addressed by the Computer Skills Test is only being taught in only one course throughout the middle school years, the curriculum is being isolated from students' other coursework. This creates a situation where students are not able to transfer their knowledge of these tools and skills to their coursework, which is a focus of the test and the curriculum. The cost of this gap is that students are not able to successfully answer the "real-life" problems presented to them on the Computer Skills Test. One requirement of this situation is that the integration of these skills be seamless. The core curriculum areas (LA, M, Sc, SS) are very rigid and leave very little time for teachers to stray from the base objectives. They must learn how to plan multi-objective, highly technical projects and lessons for their students.

It is also noted that each school has a very different approach to the integration of technology skills into core curriculum areas. In some schools, it is a requirement of the principal, while in others there is nothing tying them to this type of planning. Therefore, it is very difficult and timely to conduct a system analysis of how these skills are being transferred to both students and teachers. This is also a cause of ineffective professional development. Teachers within the system do not have a common vocabulary or language when the topic of "technology integration" is approached. For some, it is typing a simple document; for others it means a web-based research project that incorporates word processing, database creation and spreadsheet use for manipulating data. It is, however, a requirement of the system that the principal be designated as the "instructional leader" at each school, responsible for instructional and curriculum strategic goals. They are the final word on whether a program or intervention is implemented. The suggested interventions must strategically align with the vision of the principal or it will not be implemented effectively.

There is currently no incentive for students who pass the test upon exiting the eighth grade or a consequence for those students who do not pass. They are sent to high school where they will receive further remediation and multiple opportunities to demonstrate proficiency. In the past, this has not been targeted as a problem of the system due to the minimal failure rate. Until this year, most students have passed and the number of those who did not was very low, leaving the system with a very small problem. With more than two-

hundred students will be entering the high school, staffing and financial issues will move this problem to the forefront. Incentives, programs and policies will need revision to correct this so that other components of the system are not affected negatively.

Management System Gaps, Causes and Costs

The Computer Skills Test is mandated by the North Carolina Department of Public Instruction with the authority of the North Carolina General Assembly. The state's policy is that all students will pass the test prior to receiving a diploma. This is a flexible policy in that it allows counties to be stricter than the state standard, but not more relaxed. It is a requirement that the students pass the test, but the county does not have a policy in place that determines what will occur if the student does not pass in the eighth grade.

The curriculum is written by the state and implemented by each county. The state employs Regional Instructional Technology Consultants whose mission is to assist the counties in integrating these skills and knowledge into their instructional program. The county employs one Instructional Technology Coordinator whose primary focus is to help schools and teachers integrate these skills into their delivery systems. It is suggested by the state that schools employ a Technology Facilitator at each school who assists teachers in bringing these skills into their daily lessons. Only two elementary schools in the system currently employ a Technology Facilitator. No middle schools have such as person. The curriculum is written by grade level and contains a number of overall goals and individual objectives. Currently, the school system is not effectively designing strategies for teachers to meet these goals with their lessons, although many hours of professional development are offered to provide teachers with these skills. The failure of these courses to effectively "bridge the gap" between core curriculum area and the Computer Skills curriculum is keeping students from effectively practicing the relevant skills to assist them in passing the test.

At each school there is a Testing Coordinator who receives information regarding the administration of the test from the Director of Accountability. The information they receive is strictly about the actual test administration and does not include updates to curriculum, testing platform, etc. These individuals are involved in the planning of all state tests, giving them quite a hefty load. One requirement is that these people not be overloaded with extra duties, although another contact is needed to assist in interventions with Computer Skills testing. Currently, the schools nominate a Technology Trainer who is responsible for delivering computer skills instruction. Many times this is the same person who is teaching these skills to the students, but that teacher has not been involved in the test coordination meetings or planning. This person could be an asset to the Testing Coordinators, the teachers and students.

This year it was evident through conversations with several personnel that the curriculum that was taught was not necessarily the curriculum that is tested. Although new materials were provided for review, teacher who did participate in reviewing the students utilized the old materials. It is evident that the participant in the update meeting did not relay the correct information to the teachers about what exactly was expected for the review and how the interface worked. The information that was taught was very basic and did not address all of the objectives of the new curriculum.

Physical and Technical Systems

One type of gap was noted in this area – flawed environment. It was noted that the schools did not have up-to-date computers in each class with the appropriate software and internet access. The performance analysis also highlighted that data projectors have not become a standard in all classrooms. There is also only one computer lab in each school open to core classroom teachers and their students. These labs must be shared by 20-30 classrooms each day and scheduling is tight. This leaves very little time for the teachers and students to frequently work on projects and assignments that utilize technology. The main cause of these gaps is financial. There is simply not enough money to purchase enough computers and data projectors for consistent student use. The absence of these tools is costing the students and teachers valuable time learning and practicing the skills needed for the test.

Although the teachers utilize the labs, it was noted that when the lab was reserved strictly for eighth grade classes, their utilization averaged 85-90% of the time allotted in the two-week period prior to the test. The flexibility of other computers around the school appears to be a gap as well. From multiple conversations with teachers and administrators, it appears that causes of these gaps are due to the tight scheduling of the lab during this time period. If a teacher is assigned lab time, he/she is expected to utilize it and will not be offered another time. There is no staff designated to monitor the lab, leaving no flexible time for students to work on projects individually. There are, however, other computers in other grade level classrooms. These are not being used for flexible student work, although this would require strict consequences for misbehavior and flexibility on the part of another teacher. This teacher would have to absorb a student into his/her already crowded classroom. If teachers and students are not utilizing the supplied resources to the maximum degree, skills relevant to the Computer Skills test cannot be practiced and enhanced.

Human and Social Systems

With this performance problem, as in many other problems dealing with technology, there is a definite gap between the “haves” and “have nots.” In schools reporting a lower socioeconomic status, there was and has always been a lower achievement score on the Computer Skills test. This is also the case with other state tests. However, the reported difference is between five and

ten percent, instead of the noted fifteen to twenty percent gap reported in this test administration. One redeeming factor for the low-wealth schools is that they receive federal funding in the form of Title I, designed to level the playing field. There is currently no strategic planning being done in these schools to increase Computer Skills Test scores using these funds. By not offering these students remediation and extra time to work with these tools, the schools are losing valuable time to offer the lower socioeconomic students time to enhance their technology skills.

It was also noted that the teachers are offered workshops concerning technology skills, although these workshops are not viewed effective in teaching them how to integrate the necessary computer skills into their lessons. Very rarely do the teachers critically evaluate the curriculum and create lesson plans during these workshops. There was one workshop three years ago that required teachers to create a lesson plan based around the new curriculum, although no specific objectives or examples plans were identified. The goal of this was to create a database, but the lesson plans are in non-standard format and are unusable. No database was ever created. The reason the teachers are largely uninspired by these workshops is because they do not feel as though their curriculum areas are addressed by the Computer Skills curriculum. There is currently no document stating which specific skills should be taught in each grade level. If this document is not created, teachers will continue to "spin their wheels" when it comes to planning for integrated lessons.

Despite being offered almost three hundred hours of technology staff development each year for the past five years, many teachers continue to view their skill level as "poor." This is because the county's vision of this objective is very limited. For five years, one Instructional Technology Coordinator has been employed to serve over one-thousand employees, almost seven hundred of them teachers. The system has relied on a train-the-trainer model for the delivery of instruction which is largely unreliable and appears ineffective in many schools. From the current initiatives, it is evident that the county is attempting to make an effort to place responsibility for this curriculum on all teachers in all subjects at all grade levels. They have a strict policy of thirty hours of technology staff development for all teachers each license cycle, many hours of staff development are offered at all levels and they are beginning to implement a technology portfolio for elementary schools. From conversations with both, it is evident that the view from the teachers and administrators is that the students' performance on the Computer Skills test is mainly the problem of the middle schools. The high schools, who will receive over two-hundred students, all who will need remediation, are beginning to question whether the standard for eighth grade promotion is too low. The gap is clearly who will take ownership of this problem. It will cost the middle and elementary schools time, money and effort, but the results of implementing an integration effort will positively affect the scores of the students.

Section 4: Proposed Interventions Strategies

Chart Comparing Gaps and Possible Intervention Strategies

Type of System	Type of Gap	Gap	Intervention Strategy	Level of Intervention
Organizational Systems (OS)	Lack of Motivation, Lack of knowledge, Flawed environment	There is not a direct focus on the integration of Computer Skills Curriculum in the school strategic planning.	Addition of **Computer Skills integration into county-wide strategic plan**	Workplace/organization (Administrative)
Human Social Systems (HSS)	Flawed environment	The importance of the Computer Skills curriculum must be realized by teachers, parents and students at all grade levels.		
OS	Flawed environment	Teachers do not have a common language that includes the Computer Skills curriculum.	Creation of county-wide **Computer Skills curriculum map** outlining specific skills at each grade level	Workplace/organization (Administrative) creation, worker/team (School/teacher) implementation
Management Systems (MS)	Flawed environment Lack of information	Curriculum document restating goals and objectives into specific skills that learner must attain at each grade level does not exist.		
OS	Lack of incentives	Students are not passing test prior to high school.	County **policy** that states that students will pass Computer Skills test prior to entering high school, **creation of Computer Skills Summer School Program**	Workplace/organization (Administrative creation, local School Board approval)
OS	Lack of incentives	Number of proficient schools not analyzed or targeted.		
MS	Lack of incentives	No county policy on passing Computer Skills test in eighth grade.		
OS	Lack of skill/information	No method of aligning curriculum areas to Computer Skills curriculum.	**Professional development** focus – "Utilizing the Computer Skills Curriculum	Workplace/organization (Administrative) planning for worker/team

MS	Lack of information/skills/knowledge	Teachers are not familiar with specific objectives of revised Computer Skills curriculum.	Map for Planning Integrated Instruction"	(school/teacher) implementation
HSS	Flawed environment Lack of skill	Training for teachers should have specific learning objectives with examples of expected products.		
HSS	Flawed environment Lack of skill/knowledge	Training for teachers is not focused on skills that are needed to plan for and teach the Computer Skills test.		
MS	Flawed environment	Central office personnel not collaborating.	Creation of **countywide Computer Skills Message board/Blog** for teachers at each grade level to share and receive ideas with each other Technology Coordinator and Director of Accountability, who includes testing administration issues so that teachers will be more aware of updates to test administration	Workplace/organization (Administrative creation/facilitation), individual (teacher) participation
MS	Flawed environment, Lack of skills/information	Ineffective training structure for those involved in testing.		
Physical and Technical Systems (PTS)	Flawed environment	Computers in all classrooms are not equipped with the technology needed to	Administrative focus on **purchasing more mobile computer labs and data**	Workplace/organization (Administrative redirection of funding)

		perform test question examples.	**projectors** for teacher/student use.	
PTS	Flawed environment	Few classrooms are able to utilize examples of problems that will be solved on test.		
PTS	Flawed environment	Not enough computers are utilized for preparing the students for online computer skills test.	**Principals design a more flexible access to all computers** in school for eighth grade students working on projects during review period, develop policy for students who misbehave in other classrooms	Workplace/organization (Administrative planning), worker/team (teacher) implementation
PTS	Flawed environment	Labs are good for one class at a time, leaving out a significant number of students each day.		
PTS	Flawed environment	All computers in school should be used during this intensive review.		
HSS	Flawed environment Lack of skills/knowledge Lack of motivation	Lower SES students are not being provided an opportunity to practice skills outside of the school day.	Redirection of federal funds to include after-school tutoring of students whose socio-economic status does not afford them access at home – **creation of after-school lab time**	Workplace/organization (Administrative redirection to focus on computer skills)
HSS	Flawed environment	Teachers are not offered collaborative planning sessions for creating integrated projects directly dealing with the Computer Skills test.	**Hiring of more school-based Technology Facilitators**	Workplace/organization (Administration)

Description of Proposed Interventions

Intervention Strategy	Level of Intervention	Description of Intervention	Implementation Schedule and Rationale
Addition of Computer Skills integration into county-wide strategic plan	Workplace/organization (Administrative)	Each year, the county provides its schools with a Strategic Plan outlining its main goals and priorities for the year. This plan is created by the Superintendent and his advisors and presented to both the School Board and county administrators (curriculum directors and principals of each school). The building-level administrators (principals) and a team of school personnel will then create their own School Improvement Plan, outlining the school's main initiatives each year. It is proposed that, due to the results of the Computer Skills Test, this curriculum and its goals be added to the Strategic Plan for the county.	**Phase I** This must be done in order to "set the wheels in motion." If the county decides that Computer Skills curriculum and improving the Computer Test scores is one of its strategic goals, then many other objectives and strategies for meeting this goal will follow. Alignment of system strategic goals is critical for this intervention to succeed.
Creation of county-wide Computer Skills curriculum map outlining specific skills at each grade level	Workplace/organization (Administrative) creation, worker/team (School/teacher) implementation	Many counties across the state create documents called "curriculum maps." In these documents, state objectives are broken into specific skills that need to be learned at each grade level, giving teachers a common language for designing their lessons. This ensures that all areas of the curriculum objectives are addressed. It is proposed that the school system create a team of analysts from various curriculum areas, under the direction of the Technology Coordinator, to create such a document, outlining at each grade level, what skills specific computer skills must be addressed and strategies for teaching these skills at each grade level.	**Phase I** This must be done at the onset of the initiative because the creation of this document will offer all involved a common language and a set of definitive goals and strategies with which to work.

County policy that states that students will pass Computer Skills test prior to entering high school, creation of Computer Skills Summer School Program	Workplace/organization (Administrative creation, local School Board approval)	Currently, the county is adhering to the state policy that all students must pass the Computer Skills Test prior to graduation. The test is initially administered with a retest in the eighth grade year. While the state allows some flexibility with the passing of the test, it is evident that the reason for initially testing these skills in eighth grade is that they will be needed in high school. A proposed intervention is that the county implements a stricter policy stating that passing the Computer Skills Test is part of the gateway for entering high school. This will result in the need for more scaffolding measures such as more intensive remediation plans and the implementation of a Summer School program for those students who do not pass by the end of their eighth grade year.	**Phase II** This could be done during Phase I to generate the need for teachers to implement the desired changes although it may create an aggravated situation where teachers feel that the administration is "setting them up to fail." It is recommended that this intervention be implemented during Phase II so that teachers and administrators are able to see that there are some components already available to ensure their success. It cannot be done later than this because it will be used as a motivator for teachers to see the need create integrated lessons and programs for their classrooms. The policy should be written to be enforced the school year following Board approval.
Professional development focus – "Utilizing the Computer Skills Curriculum Map for Planning Integrated Instruction"	Workplace/organization (Administrative) planning for worker/team (school/teacher) implementation	By creating a county-wide curriculum map, specific skills and strategies for teaching those skills will serve as a job-aid for teachers. This intervention addresses the need for teachers who do not currently possess the skills or lessons in their repertoire to teach the required skills. This professional development initiative will focus on core curriculum teachers writing lessons, with assistance, that specifically meet their curriculum objectives as well as the objectives of the Computer Skills Test.	**Phase II** This should be implemented while the policy for change is being written and approved so that teachers will see that they are being prepared for this change. It cannot occur before the curriculum map is written or after the policy is enacted due to the failure that will occur with an unsupported policy. The teachers must feel that they can attain a higher standard.

Creation of countywide Computer Skills Message board/Blog for teachers at each grade level to share and receive ideas with each other Technology Coordinator and Director of Accountability, who includes testing administration issues so that teachers will be more aware of updates to test administration	Workplace/organization (Administrative creation/facilitation), individual (teacher) participation	Because in the performance analysis it was noted that the communication between the Testing and Curriculum departments is not necessarily as a coordinated effort, this intervention addresses the need for a public forum to discuss the issues and needs of the Computer Skills Test. By creating a message board or blog, teachers and administrators will be able to communicate on curriculum issues, testing formats and administrative needs. This will allow for dialogue between those at the management and individual level to discuss needs and issues openly.	**Phase I** This can be created and initially used during Phase I, although its widespread use will not be until Phases II and III. By creating it during Phase I, early adopters will be curious and see many of the advantages to using it, therefore establishing content for the majority to see during the implementation of the Staff Development intervention.
Administrative focus on purchasing more mobile computer labs and data projectors for teacher/student use.	Workplace/organization (Administrative redirection of funding)	This is inherently a funding issue and can only be solved by the redirection of funds into the purchase of more technology for teacher and student use. If more mobile computer labs and data projectors are purchased, teachers and students will have more access to the appropriate technology for lessons that integrate these skills instead having to compete for the use of one computer lab, as it currently stands.	**All Phases and Ongoing** Because of the large amount of funding required, it would be impossible to put a time requirement other than to say that all surpluses in funding should be spent on this intervention in order to support the initiative.

Principals design a more flexible access to all computers in school for eighth grade students working on projects during review period, develop policy for students who misbehave in other classrooms	Workplace/organization (Administrative planning), worker/team (teacher) implementation	By designing a situation that opens up all computers in a school, the principal will create a situation where students are able to flexibly work on projects on any computer in the school, even if another class is in progress. This will require a very strict behavior policy on the part of the school in order to keep this access from being a burden on other teachers. It will, however, facilitate more opportunities for project-based computer instruction and practice without having to take an entire class to the computer lab to work on projects.	**Phase III** Building-level administrators and teachers will resist this intervention unless there is a very specific reason it needs to occur. If more integrated lessons are being planned and implemented, teachers and principals will see a need to open up all available computers in the school in order to allow for more student use. By implementing a stricter behavior policy, teachers will be comforted by the consistency and structure of the project-based assignments.
Redirection of federal funds to include after-school tutoring of students whose socio-economic status does not afford them access at home – creation of after-school lab time	Workplace/organization (Administrative redirection to focus on computer skills)	Currently, schools are paying teachers out of federal and state remediation funds to tutor students after school in reading and mathematics. Because the state is focusing heavily on the Computer Skills curriculum, it is proposed that this same program be applied to Computer Skills, an area where student performance has seen a dramatic decrease. These schools could offer a teacher extra pay to work after school one or two days per week throughout the school year to offer lab time to work on projects or remediation lessons to sharpen students' skills.	**Phase I** This intervention could occur immediately, as many other tutoring interventions are currently in place. This initiative does not require any specific change in the culture or schedule of the regular school day. It is simply providing more access to students at a lower socioeconomic status and paying a teacher to tutor.

Hiring of more school-based Technology Facilitators	Workplace/organization (Administration)	This intervention has been proposed numerous times and is seen as a way to fix many of the problems mentioned in this report, specifically those dealing with teacher staff development and collaboration on projects dealing with the Computer Skills Test. By placing a qualified Technology Facilitator in the building, administrators are ensuring that teachers are receiving "just-in-time," staff development, collaborative planning on Computer Skills initiatives and lessons, a coach in times of question and a knowledgeable assistant while delivering and scaffolding integrated lessons. This position serves as a resource for both teachers and students and is very valuable in the structure of a school.	**Phase III** After the Staff Development initiative has succeeded in providing teachers a common language, more time and collaborative planning, more of a focus in the schools will be on the integration of technology skills into the core curriculum areas. As this culture change begins to occur, teachers and administrators will begin to see more of a need to employ someone in this capacity to improve on what has already been accomplished.

Implementation Schedule

Phase I – Fall 2006

- Addition of Computer Skills Initiative into County Strategic Plan
- Curriculum Map Creation
- Communication Tool (Message Board/Blog) Creation
- After-school Computer Skills Remediation

Phase II – Fall 2007

- Professional Development - **"Utilizing the Computer Skills Curriculum Map for Planning Integrated Instruction"**
- County policy change and implementation of Summer School Program

Phase III – Spring 2008

- Flexible Access to all computers for integrated projects
- Hiring of more Technology Facilitators

Ongoing Initiative – continue to purchase appropriate hardware needed for Computer Skills instruction

Section 5: Feasibility Analysis

Risk Analysis Table – The following table will generally assess the risk involved with each intervention strategy.
Key:
AC = Administrative Capacity – Does the current administration have the power and knowledge to make the proposed change?
C = Cost – Does the county possess the needed financial and human resources to make the proposed change?
R = Readiness – Do the stakeholders (administrators, teachers, parents, students) realize the need for the proposed change?
T = Technology – Are the appropriate technological needs in place to support the change?
CC = Culture for Change – Would the current culture allow for and support the proposed change?
X = Complexity of Change – Will the implementation of the change be complex, involving numerous people and departments?
S = Students – Will students benefit from the change?
Y = Sustainability – Is the intervention sustainable?
B = Implementation Barriers – Are there any barriers to implementation?
FI = Feasible Intervention – Do the above factors support that this is a feasible change?

Intervention Strategy	AC	C	R	T	CC	X	S	Y	B	FI	Discussion
Addition of **Computer Skills integration into county-wide strategic plan**	+	+	+	+	+	-	+	+	+	**+**	This intervention is the basis for the entire intervention strategy. The Superintendent is very supportive of technology issues and is demanding an increase in its use in the core curriculum areas. There will be one factor negatively affecting this change – it will affect a large number of people in many different curriculum areas.
Creation of county-wide **Computer Skills curriculum map**	+	+	+	+	+	+	+	+	+	**+**	The creation of a curriculum document seems to be a good strategy for everyone. The cost is relatively low, since it can be developed as a staff development initiative and posted on the website. Many teachers have participated in the development of such documents for other curriculum areas so the readiness, technology and culture for change are all in place. The students will most certainly benefit by the teachers having an increased knowledge of the Computer Skills

											curriculum. Once the document is changed, it can be enhanced, revised or amended without much effort.
Intervention Strategy	**AC**	**C**	**R**	**T**	**CC**	**X**	**S**	**Y**	**B**	**FI**	**Discussion**
Policy Change and Creation of Computer Skills Summer School Program	+	-	+	+	+	+	+	+	-	**+**	Although the policy change will create some strife among stakeholders by not allowing students to move to high school without first passing the test, the summer school program will provide the support needed to facilitate the effort. The summer school program will, however, cost the system the salary(ies) of those needed to teach the class(es), but the overall gains will outweigh any negative effects.
Computer Skills Integration Professional development	+	-	+	+	+	-	+	-	+	**+**	Currently, the teachers participate in technology staff development. This intervention will provide a much needed focus for it. It will, however cost the system in human resources and the salary of those who will design and deliver it. It will also require planning on the part of curriculum directors to develop courses that meet this new standard.
Creation of **countywide Computer Skills Message board/Blog**	+	+	-	+	-	+	+	+	+	**+**	The creation of a message board should be an easy fix to the problem of communication, although many will not see it as a valid resource. These are the very same people who find it to be an unnecessary chore to check their email and visit the county website for information. These will be the main barriers to the success of this initiative. Currently, within the culture of the county, message boards and blogs are not used to relay information. Targeting a group of early adopters should make this intervention more successful.
Administrative focus on **purchasing more mobile computer labs and data projectors** for teacher/student use.	+	-	0	+	0	0	+	+	-	**0**	This intervention must be made at the school level, with only some assistance from the administration. Currently, the school administration has it in their power to make the change, and some are; but, others do not see these initiatives as offering a significant ROI (return on investment). These naysayers will be the major barrier to this much needed intervention. The students and teachers will benefit and see benefit from the spending of these dollars.

Principals design a more flexible access to all computers in school for eighth grade students working on projects during review period; develop policy for students who misbehave in other classrooms.	+	+	-	+	-	-	+	+	-	**+**	This intervention will see many barriers from teachers and administrators claiming that having flexible access to all computers in a building will disrupt the instruction that is occurring on a day-to-day basis. While this may occur, if a strict behavior policy and specific, intensive projects are created, the students will benefit tremendously from gaining more access to work on their projects.
Redirection of federal funds to include after-school tutoring of students whose socio-economic status does not afford them access at home – **creation of after-school lab time**	+	-	+	+	+	+	+	+	+	**+**	The only true barrier to this initiative is that it will require that administrators allocate remediation and federal dollars to the tutoring of students who have not passed the test or need more practice. Tutoring is already occurring at the school level for subjects such as reading and math. Teachers are already being paid for it. With this intervention schools can see the same successes that have been seen on the Reading and Math test, on the Computer Skills Test.
Hiring of more school-based Technology Facilitators	+	-	-	-	-	-	-	+	-	-	Unfortunately, this is not a feasible intervention at this time. Neither the culture nor the funding of the schools is ready for the hiring of a Technology Facilitator at each school. Although this is done in other counties, administrators do not see this as a valid reason to move a teaching position into a non-teaching position. The cost is much too high and the ROI has yet to be proven. As the other proposed initiatives progress, this may become more feasible.
Intervention Strategy	**AC**	**C**	**R**	**T**	**CC**	**X**	**S**	**Y**	**B**	**FI**	**Discussion**

Feasibility Decision Matrix

Consideration	Addition into Strategic Plan			Curriculum Map			Policy Change			Professional Development			Message Board/Blog			Hardware Purchase			Flexible Access			After School Remediation			Hiring More Tech Facilitators		
	R	W	I	R	W	I	R	W	I	R	W	I	R	W	I	R	W	I	R	W	I	R	W	I	R	W	I
Return on Investment	1	1	1	1	1	1	3	5	15	2	1	2	1	1	1	1	5	5	2	5	10	1	1	1	5	10	50
Strength of Support	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	2	3	6	2	3	6	1	3	1	3	5	15
Organizational change Impact	1	1	1	1	1	1	1	1	1	2	5	10	2	5	10	2	5	10	2	5	10	1	1	1	1	1	1
Barriers to Implementation	1	1	1	1	3	3	3	5	15	1	1	1	1	1	1	2	3	6	3	5	15	3	1	3	3	5	15
Number of Interventions in Bundle	1	1	1	1	1	1	3	1	3	3	1	3	1	1	1	2	1	2	3	1	3	1	1	1	1	1	1
Available Resources	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	3	5	15	2	3	6	2	3	6	3	5	15
Dependence on Time	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of sites affected	3	1	3	3	1	3	3	1	3	3	1	3	1	1	1	3	1	3	3	1	3	1	1	1	3	5	15
Number of people/groups affected	3	1	3	3	1	3	3	1	3	3	1	3	3	1	3	3	1	3	3	10	30	1	1	1	1	5	5
Totals	13			15			45			26			20			41			84			16			118		

Analysis of Intervention Feasibility, Cost and Projected Gains

From the above Feasibility Decision Matrix, it is noted that there are several components of the intervention that are more "risky" than others. In the implementation schedule, these interventions are to be implemented later in the project. Initially implementing the "less risky" changes will assist in creating a culture more accepting of the proposed changes which will be much more dramatic.

Adding a focus on improving scores on the Computer Skills test is a safe way of bringing the issue to the "forefront" of the county's initiatives, creating an environment where stakeholders will take a close look at their current situation and develop a plan to reach their goal of increasing the performance. The financial costs for this intervention will be minimal, although it will require significant attention and thought on the part of the stakeholders. By adding this to the county strategic goals, schools will be more receptive to initiatives designed to help them meet the goals of the school and county improvement plans. More directives and strategies aimed at improving technology instruction will likely occur.

The school system is already developing curriculum maps in several other areas of study, including Mathematics and Language Arts. The creation of this document for the Computer Skills curriculum will offer all stakeholders a specific language, set of skills and strategies at each grade level. This intervention will cost a significant amount of human resources, although financially the cost will be relatively low. The county has implemented a system of eighteen hours of staff development into each school year. This time can be spent offering teachers and administrators a training and work sessions in mapping a curriculum document for the Computer Skills curriculum that is easy to read, understand and implement. After it is created, significant gains in teacher understanding of what skills are required at each level should be noted.

The implementation of after-school remediation for students who are assessed at below grade level for Computer Skills will be a relatively welcome change and one that will see immediate gains in the area of student performance on the test. This intervention, although a significant financial cost because of the hiring of teachers to remediate the students, will be nothing new to teachers or administrators. Many of the schools are already implementing such a strategy for the Reading and Mathematics tests. This will require one teacher per ten students who will teach lessons or offer assistance two to three days per week in the Fall and for a few weeks in the Spring (for the re-test). The goal and prediction for this intervention is that the schools will see at least a 10% increase in student performance on the Computer Skills Test.

The creation of the Message Board/Blog for teachers will be the least intrusive of the proposed interventions, although, if utilized, the system will see significant gains in communication, collaboration and dialogue about the issues relating to the Computer Skills Test and technology integration as a whole. This will also serve as a way for the Technology Coordinator to assess the progress of the intervention project and make changes as needed to contribute to its success.

As the project progresses, a shift will be made to training teachers to utilize the curriculum map for planning their own integrated units, projects and lessons at all grade levels. The system is already offering a significant number of staff development opportunities to its employees; so, this intervention will be nothing new to the stakeholders. It will, however, offer the teachers and administrators specific skills and knowledge dealing with strategies use to meet the objectives and goals of the Computer Skills curriculum. This intervention will see significant cost in both human and financial resources to recruit and compensate instructors for designing and delivering the professional development, although gains in the amount of integrated lessons will be noted as the system begins to tie these lessons to the curriculum map.

The purchase of hardware needed to teach the Computer Skills curriculum is nothing new to this system. This goal has already been added to the county's Technology Plan and is a specific focus of the system, although the financial cost of maintaining such hardware is a burden on the stakeholders. The intervention states that the system must continue to improve and update its hardware. It also maintains that more data projectors must be added to the classroom in order to facilitate the number of integrated units, lessons and projects able to be taught. This intervention brings a significant financial burden to the system, one that it is currently struggling to bear. It must continue make progress in this area for these interventions to succeed. While the projected gains of this intervention cannot be truly measured, the consequences of not continuing to progress in this area will be realized by the stakeholders.

By changing the county policy to be stricter than that of the state will be a political burden on the stakeholders, although this will drive the most significant gains that the system will see. This policy will create the need for a Summer School program for students not passing the test. It will also hold the stakeholders of the system to a much higher level than other surrounding systems. If this policy is changed, more students will pass the test than with any of the other interventions discussed because the expectation of success will be the underlying theme. It will also force administrative bodies to implement various methods of student support in order to meet the mandated standards. This will require a significant amount of human resources to build support for such a policy as well as financial resources to implement the needed supports to ensure student success.

Flexible access to all computers for middle school students will be one of the tougher interventions to implement. If this intervention is done correctly, it will create a climate that supports student exploration and integrated project-based technology instruction, one of the main themes of the new Computer Skills curriculum. The main cost of this intervention will be in human resources because all teachers will begin to take ownership of all students' success on the Computer Skills Test at the middle school level. It will require a dramatic shift in culture and will see much resistance on the part of the teachers, although significant gains will be noted in the amount of technology instruction that will occur. This is an intervention aimed specifically at the middle-school level where the main focus of the Computer Skills Test is seen.

The final intervention and the hardest to implement will be the hiring of Technology Facilitators in each building. Although the need is seen and actually has been implemented at two schools, many administrators do not see this as the most pressing need, opting to hire more teachers to decrease class sizes or more Literacy Specialists to increase Reading scores. They have not identified a need to employ people in this capacity and will not unless the previous interventions are in place. The financial cost to the system is tremendous, the creation of thirteen new positions, at least $600,000. To the stake holders, this is thirteen new teachers and more than 325 students to disperse into other classrooms. This intervention, although crucial, will not occur until a need is seen at the school level or significant gains are made in the schools with these positions. If this intervention is adopted, significant gains in professional development, integrated units and lessons, teacher knowledge and skills, and student performance on Computer Skills assessments will most certainly be noted.

Section 6: Evaluation Plan

Formative Evaluation

Each phase of this performance improvement project will undergo formative evaluation that will include measurements of improvement after the implementation of each intervention. It will be the duty of the Instructional Technology Coordinator to implement the evaluation methods listed below:

Phase	Intervention	Method of Data Collection	Interpretation of Results	Type of Data Collected	Proposed Gap Closed by this Intervention
Phase I	Addition of Computer Skills Initiative into county Strategic Plan	Individual School Improvement Plans (Evaluated by the Instructional Technology Coordinator)	A successful implementation of this intervention will surface as schools create their own School Improvement Plans with specific goals and strategies designed to meet this initiative.	**Quantitative** (How many strategies were developed in the schools that addressed the Computer Skills Curriculum? Did they include staff development?) **Qualitative** (How do the objectives specifically apply to the Computer Skills Curriculum? How did this intervention change the focus of the school? Are more technology integration projects planned?)	School-wide strategies developed focused on improving students' and teachers' knowledge and skills

Phase I	Curriculum Map Creation	-Document Analysis by Instructional Technology Coordinator -Stakeholder Surveys	Several features of the document will be analyzed including its structure, usability and alignment to curriculum goals. Analysis of these features of the document will allow evaluators to recognize whether it will actually be useful for stakeholders, thereby serving its intended purpose.	**Quantitative** (How many grade levels were addressed in the curriculum map?) **Qualitative** (Were specific grade-level strategies and skills addressed in the map? Did the skills align with the Computer Skills curriculum? Are the strategies in the map in a usable format for teachers?)	Alignment of curriculum goals to specific skills and knowledge; creation of a "common language" for stakeholders
Phase I	Creation of Communication Tool	- Analysis of tool's use and quality of use - Survey of "early adopters"	The evaluating of the communication tool will analyze both the use and ways in which it is used. A successful implementation of this tool will show use by more than half of the identified "early adopters" during the period of one month surrounding each test administration. The quality of use will be determined by how helpful they view the application.	**Quantitative** (Number of users/posts) **Qualitative** (What type of information has been exchanged using this tool? How helpful is it viewed by the "early adopters?")	Communication about best practices, ideas, critical information about curriculum modifications and testing issues will be discussed
Phase I	Implementation of after-school Computer Skills remediation	- Creation of such programs at each school - Student surveys	The success of this intervention is the actual creation of after-school tutoring programs at each school and the perception by	**Quantitative** (Number of programs created) **Qualitative** (How effective is after-school tutoring program? What	Lower socioeconomic students and those with limited skills will

			students that these programs are successful in offering them added instructional value.	types of lessons and activities are being taught?)	be offered remediation and practice outside school hours.
Phase II	Professional Development	Implementation of professional development classes - Teacher surveys about effectiveness of courses	This intervention will be successful if the courses are both offered and viewed as helpful by the stakeholders.	**Quantitative** (Number of programs created) **Qualitative** (What types of workshops were conducted? Were the workshops viewed as successful by the stakeholders? What types of instructional products were created as a result of the workshops?)	Stakeholders will be offered specific strategies for using the curriculum map to design more effective integrated lesson plans, units and projects.
Phase II	Policy change	- New policy adoption	This intervention is dependent on the county adopting a stricter policy than the state. If the need is seen and the policy adopted, the intervention will be successful.	**Quantitative** (Policy adopted by county) **Qualitative** (What type of support structures were put in place as a result of the new policy?)	Expectation that all students will pass Computer Skills Test before entering high school and creation of appropriate support structures will be necessary.
Phase III	Flexible access to all computers	- Number of middle schools who have implemented strategy	This intervention is not only dependent on the how many schools have implemented the initiative, but how the program is viewed by	**Quantitative** (How many schools have such a program? What percentage of school computers are being used	Student access to all student-designate computers will increase;

		- Teacher view that strategy is helping student success	teachers. In order for it to be successful, "teacher buy-in" must be high; otherwise it will be viewed as a failure.	for review before the test? Has the implementation of this program been more of a help or hindrance in teachers' classrooms? Are teachers able to plan more computer-based projects?) **Qualitative** (What types of projects are teachers able to do now that they were previously unable? How has the school climate changed due to the implementation of this program? What types of behavior have teachers noticed as a result of this program?	number of computer-based projects will increase; culture of school will change to be more accepting of independent computer projects.
Phase III	Hiring of more school-based Technology Facilitators	- number of positions created	This intervention will be evaluated by the number of positions that have been created	**Quantitative** (How many positions have been created?)	More school-based technology integration initiatives, units, projects and lesson plans will be implemented and more focused staff development will occur.

Summative Evaluation

The summative evaluation for this intervention process will be the increase in scores on the Computer Skills Test. The success of this intervention will be determined by examining the scores prior to the implementation of the interventions. If the scores have shown significant increase from the previous scores and resume a more regular pass rate (as measured by tests in years before the change in testing and curriculum), then the intervention will be deemed successful.

Description of How Findings will be Interpreted

Formative evaluation findings will be interpreted to determine the success of each phase the intervention plan and evaluate whether moving to the next phase of the plan is feasible. If the formative evaluation for each of the interventions is deemed successful, the project will progress according to the proposed implementation schedule. If the formative evaluation yields unsuccessful figures and descriptions, then adjustments will be made to previous interventions prior to initiating more interventions.

Reporting Findings

Findings will be reported to the Assistant Superintendent for Curriculum and Instruction who will relay this information to the Superintendent. This information will be used by the Superintendent and Board of Education for making decisions regarding instruction and educational policy. Data from both formative and summative evaluations will be submitted to all curriculum supervisors, school-based administrators, teachers and parents as well as the North Carolina Department of Public Instruction.