Field observation report
Gena Barnhardt
Hickory High School, Hickory, North Carolina
http://www.hickory.k12.nc.us/HHS/Home.HTM

Submitted Betsy Price
June 18, 2002

School Community

Hickory High School is an inner city high school in Hickory, North Carolina.   Hickory is famous for its furniture factories. It is home to many corporations that generously provide support in cash and in in-kind donations to the school.   There is great pride the school's high academic standing and the number of students who attend college. It is one of the few schools that have an academic banquet, similar to the football and other sports banquets that are so popular in other schools. My visit was right after the academic banquet that over 800 people attended.

Hickory High is a large campus, in a two-story 50 year old building. There are approximately 1,200 students. The school is well used and well maintained. Parts of the building, like the library, have been remodeled and updated.   There is a striking contrast to the old sections of the schools and the new sections. The school is integrated; the largest minority is Afro-American. The very interesting part about this school is that it is 40 percent free lunch. One would expect a low college rate. However almost 90 percent of the students attend some type of advanced schooling after high school.

The school was one of great contrasts. The academic achievement was high and the underserved population high. The students seem preoccupied with academics and grades, however security is tight. The vice-principal was assigned only to disciplinary matters. An armed guard who carried one of the largest guns I have seen in a school guarded the school. The students were very familiar with him and seemed to be comfortable with him around. Even though Gena introduce me and told him what I was doing in the school, he asked pointed questions to assure himself that was indeed what I was doing.

Corning Glassworks donates $12,000 each year for A.P. biology and $4,000 a year for supplies for the other science classes. They also donated all the wiring materials in the school.

Hickory is also a town that is full of industry that requires skilled craftspersons. In the auditorium there was a display of student made furniture. During the awards assembly, the teacher who taught bricklaying announced his retirement. The school was hard pressed to find someone to replace him since he was a master bricklayer. They offer a large number of business courses. Most of the business classes were for learning keyboarding. It seems the business and computer departments are the same department.

Teacher

Gena is very energetic and attends many professional development workshops and seminars. She actively watches for opportunities and spends as much time as a mother of four can traveling to workshops. She is nationally certified. She is the first teacher I met to realize the potential of many of the alternative learning styles on the web site. She attended a workshop to pilot test a web based testing program, WebAssign http://www.webassign.net/ developed by the physics department at North Carolina State. The students take the tests on line. After they have completed the test, they can immediately access their scores to determine many questions they answered correctly. They can then retake the test. In Gena's class, the student grades and learning were far better than what they would have gotten on a regular paper and pencil test when the grades were handed back days or weeks after the test. She enjoys using the web and uses often in her classes. http://www.geocities.com/barnhardtge/

Students

There has to be a backpack story in this school. Students seemed to prefer to carry their books around all day in the backpacks rather than put them in the lockers. The backpacks here were huge. The kids kept them low on their backs, which must have hurt. Gena showed me the lockers and they were small but they still could have rotated the books during the day. Another factor could have been that the teachers did not have a classroom set of books like other schools I have seen.

In order to graduate from school, the students have to pass a state competency exam that is 25 percent of their final grade. The test is weighted and curved. There is not a passing grade; the scores affect their class standing. In most schools this would not be a motivator for most students, however in this school it was.
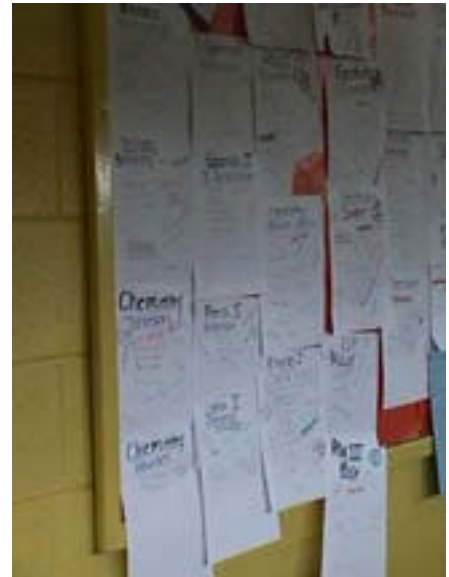
I came two days before the exam. There did not seem to be much emphasis on studying for the exams. I asked Gena if she were worried about the students passing. She wasn't since she believed the tests were relatively easy for her students. In Hickory, the teachers are confident that the students will pass, they just like them to get the highest scores possible. Also, the students could study during the exam cram after school that afternoon. During Gena's first year at the school, she started late afternoon study sessions the day before the exam. Now, most of the teachers volunteer their time to help the students do the last minute preparation for the exam. Outside her room were the sign up sheets. The students choose the subjects and teachers they want to study with and sign up. Somewhere in the city there were three or four pizza companies getting 50 pizzas ready to be delivered to the school.

Thirty six percent of the students are minority and 44% of the school lives in poverty. All 1058 of the students rate average to above on the state achievement tests. Ninety percent of the

students attend college and 76% graduate in five years or less. Eighty-eight percent graduate in six years of less.

Computers

To have computers in her room, Gena stole 6 Gateway 2000 computers that were designated for the entire science department. They were retired computers from a lab that they upgraded last fall. When the computers became available, Gena requested all six. The science teachers felt it was only fair to divide them up rather than to have one teacher get them all. The computers sat most of the year without anyone using them. A week or so before my visit, Gena took them all and put them in the classroom. When Gena procured the computers she was completely unaware of what needed to be done in order to use them for Exploring Life.

She placed the computers on the lab benches at the side and back of the room. She thought the students could use them in small groups. There were sufficient electrical outlets, however there were no places to plug them into the network. I didn't check, but the principal said that each room has a hub for 4 computers. If I understood this correctly, the school would still have to add at least one additional hub, some booster to reach the back of the classroom and wiring and switches to network them. The principal was under the same notion as Gena that she would be able to set up the computers without any changes.

Gena asked the systems people to help her get them networked. They said they would try to get there before I did. This did not happen. My guess is that they knew that it was not possible to get them running in the time frame she gave them. When Gena realized they would not get there in time, she attempted to use the CD.   Unfortunately the computers were still password protected. Gena had no way of knowing the login name or the passwords so there were there, useless. Again, the systems people would have to come in. They would need to reset the passwords. Then they would have to resolve if they had enough licenses for the other software applications. If not, they would have to be taken off or more licenses purchased.

Gena had access to a LCD projector on a rolling cart that she could use almost any time. There were two community LCD projectors. There were probably other audiovisual options in the back room that she could have used, but I was a bit afraid to go back there.

The entire school was hard wired with fiber optics. Corning Glassworks home office is in Hickory and the wiring was donated by them. Each classroom was wired. As stated before, all

the rooms had a computer hub, but they just counted on them for the teachers' computers not for a bank of classroom computers.

The school has six computer labs that teachers could use. Gina has not had any difficulty doing the pilot testing by using the labs. However, she did have to use the pilot testing as a reason to get priority over other users. Also, it was a bit fuzzy but I pieced together that the technology money for biology went to the computer labs in the library. The largest and most available computer area is in the remodeled library. The last day I was there, students were taking a national test there. I got the impression if I had not been there to observe, the test proctors would not have let Gena's class use the computers. In this school, tests take priority over everything.

Gena told me that the lab computers were slow to boot up. I timed them and it took about 5 - 7 minutes to boot up the computers. Each student had to log on with a user name that was linked to the science department not the students and a password. Once the students were logged on, the computers were fast. The systems person I interviewed was one of the teachers turned systems person and not the real technician. It is a mystery why it took so long. Once the site was cached, it was much faster.

Classroom

Gena's classroom had once been an open classroom. There was a large, bulky corrugated wood panel screen that could be pushed back to join two rooms. It had never been pushed back for as

long as she had been in the room. The rooms were huge. However they were dark and dreary looking. The six lab stations were in the back and one side of the room. There was a lecture area with old-fashioned wood tables (well decorated by years of student use) with the black slate tops in no particular order crammed into the front. Gina said the administration did not spend much money on furniture. I would have phrased it as the administration did not spend **any** money on furniture.

The science rooms were arranged in a quad and were joined by a common area in the back. This was a storage area for lab and audiovisual equipment. There were some miscellaneous televisions and overheads there. The lab equipment was stuffed everywhere as teachers just stacked it into the room in no particular order.

Gina had mounds of paper and stuff everywhere. It appeared that when she filled up the

teacher's desk, she took over the next row of tables. It was a good thing that the end of the year was near, because it was apparent she would soon have to take over the next row. That would leave little room for the students. It was hard to determine how well equipped she was. Gena was not the only

biology teacher who was neatness challenged. However, there was a chemistry room attached to the complex that was immaculate. I would have liked to talk to the teacher about his relationship with the biology teachers.

My first observation was that it would be impossible to do labs in this disorganized chaos. However when the students did a lab, it was obvious they knew the routine. Gena just had to scatter the lab equipment around the kids and were able to find what they needed. It was pretty amazing.

There was a large green black board and a corkboard behind the lab benches. In order for someone to write on the board they would have to stand on the benches.   The corkboards were bare. Gena had removed all the materials because the room was to be painted over the summer. There was a large whiteboard behind Gena's desk that she used most of the time for lectures.

Class Observations

This week was the end of the year for the students. On Thursday and Friday the students would take their state achievement tests.

The first class that I observed was a general biology class that were getting ready to review for tests at the end of the week. Gena used Chapter 36 as a review and partly to show me how she used the site as a whole group activity. She projected the web site on a pull down screen. The

projector was not a good one and the screen was worse. The web site lost its freshness and color. However the students did not seem to mind. Together the class did the climatograms and went over the definitions of words. It was a bit rushed because the graduating seniors awards assembly was that day. Classes were shortened to add an extra period.

The students and Gena seemed used to a routine of everyone not doing the same thing. In the back, one student was doing a make-up test. Another seat was occupied by a backpack - but no student. She came in late and the other students quickly caught her up on what was going on.

The students enjoyed doing the activity as a group event. They took turns reading the web site. The projection was a bit fuzzy and, in order to read the text, one of the girls had to walk up to the front of the screen. Gena later said she was one of the lower level readers. Walking up to the screen must have bought her time to read the words. The kids in Manny High School also tried to hide their lack of reading ability.

The other two classes were advanced students. They had just completed their national tests. She had them do the genetics chapter for my observation as a review and to show me how she uses the web site with labs. These students used one of the computer labs in the library. Gena had the students meet in her classroom and walk down to the labs. She waited for a handful of students to appear then she walked them down. The rest had to figure out where she was. Again, the students seemed comfortable with the confusion and wandered dutifully into the computer lab. They immediately set down to work when they arrived.

The lab and the computers were new. The room was not meant to be a computer room. There were computers around three sides facing the wall and a double row down the middle where the computers were back to back. The wires from the middle rows of computers were strung on the floor over to the wall. Whoever set up the room put a raised mat over the wires, but people still tripped on it (me mostly). This arrangement made it easy for Gena to walk around and work with students individually.

The computers were very slow to boot up and to allow the students to pass through the password program. It took 5 to 7 minutes before the students were able to have the web site open. The computers were new and fast. The problem was in the network system. My guess is that the computers could not handle a classroom filled with students logging on at one time. This class was just a handful of students so the problem may have been more on the system. (This situation was discussed in one session at the NECC conference. It seems that there is a switch that can be installed that corrects the slowness. Even with the switch there is always a slowness problem with students trying to access the network at one time. If the switch could cut down the time in half, it would have helped. In other schools or classes where discipline is a problem, the 20 minutes of downtime would have been disastrous.)

Most of the students in the class were juniors or seniors who were participating in the awards ceremony that afternoon so they were excused from class for rehearsal. The few students who did show were to work through the Caloriequest. As they were doing so, we asked them to make believe they were the developers and were going to redo the

page. They were to imagine themselves as persons who would be recommending this program to general bio teachers. It was interesting, because they took this very responsibility. They also thought like teachers and not like students. Things that I know they liked they didn't recommend because they were thinking like teachers. It was a fun to watch them.

The next day all the juniors showed. The seniors were finished with school. The students did the prelab activity because they were going to do the strawberry DNA lab the next day. They already had their genetics unit, but many of them would be taking their state tests on Thursday and Friday so Gena though it was good for review. The routine of studying for state, national, and specialized testing is so routine and intrained in the curriculum, that the students and teachers don't even realize how much they prepare the students for the testing. It works out since the school is so academically inclined. It was impressive how many of the seniors were going to college with some type of scholarship or grant.

The third day, Gena did the lab with the students. She spread out the lab equipment for the students in the back of the room. They had a handout with the directions. It came from the reviews she did of the lab. The students divided themselves up into and groups and were responsible for reading the labs and doing the activity. Gena circulated around the classroom to help and answer questions. The students preferred to work in the back of the room sprawled over the lab stations and the desks in the back. It was crowded, however that didn't seem to bother Gena or the students.

All of the students wore lab glasses and were familiar with the equipment. It only took them about 15 minutes from the start of the activity to get the DNA. The lab was a complete success. They were thrilled and someone came up with some micro tubes so they could take the DNA home with them. The kids spent more time playing with the DNA than they did for the entire experiment. The remainder of the period, they worked on an evaluation worksheet.

Interview with the principal

Q. Are you familiar with the program that Gena is working on?

A. Yes, she is working on the Internet with the students.
(Note: I asked this question because the principals I interviewed were not as familiar with the program as I would have expected since they had to provide a letter of support. This principal had not seen Exploring Life nor was familiar with the particulars of how it worked.)

Q. For this program to work it would be best if Gena had computers in her room. Would this be possible?

A. Sure. We have the entire school wired with fiber optics. It was quite a feat. Eight-five computers were networked. The fiber is the fastest connection. Each room has two Internet jacks and a splitter and booster. That is the best there is. We had it donated from Corning. They support technology in the sciences. Every year the science department gets money to get more equipment for their classes. We have five computer labs. All the computers you see stacked in my office will be for the next lab. (The principal's office is also used as a storage facility. The office is huge, about the size of a classroom so he lets the staff use it as temporary storage. Not only did he have computers in boxes stacked almost the roof, but he also had all the snacks and drinks for the parents for the awards ceremony.)

Every teacher has a computer in their classroom. We have a hub to put in more computers also. We could use some of the retired computers for her class.

But all books come with a CD now.

Q. This program is the first to use computers. There are more to come. What will happen when more computers are required for curriculum?

A. We have a plan for our computer technology. In fact, we were just investigating if we could not purchase textbooks and buy laptops for each student. We have already looked into the cost of insurance. The students would have to pay the insurance. The school would buy the laptops. The money we put into textbooks could be substituted for more computers and for more software. This would be our plan to begin in 2010. We are building computer labs. We only buy Gateway computers.

Q. Have you looked into the wireless laptop computers rather than the labs?

A. Yes we have. For now we decided to put our money into computer labs. Business will have three labs by this summer and the library two. We remodeled the library this year. Have you seen the library? What do you think? We have a full time person (his wife) who does the planning for the technology and decides where we are going. She spends all her time working with the teachers and the computer staff. She has gone to many conferences.

I have been here five years. The teachers have autonomy to do what they want. Ninety three percent of the ideas are generated by the teachers don't interfere with what they do. I support them anyway that I can. We create a sense of family here. The school has a relaxed atmosphere. Gena has gone to many conferences and trainings. She is a board-certified teacher. I asked her to participate in a presentation to the board and state officials on the status of the school. She did a very nice job.

When I first got here I wanted every student to learn a new word every day. In the morning announcements I give the word of the day. Do you know that over the four years that they are here they have learned over 1,000 new words? Our students do very well on testing. We have about 90% of our graduating seniors go to college or other schooling after high school. Our scholarship record is the best in the state. We are even working to decrease our dropout rate.

Another thing I did was to start an academic banquet. Just like the sports teams have, but for the academic students. We had over 800 people attend the banquet this year. When I first called the board members to tell them what we were going to do they said no one would come. But they did. It is a great success.

Q. What about other types of computers? Have you looked into purchasing the electronic whiteboards?

A. Yes, we are looking into buying those. We already have them in the business department. Does Gena need to use those? She can use them any time she likes.

Systems Person

Gena and I bumped into the systems person in the hall while we were going to the library. She made it very clear she wanted to talk to me. She was a classroom teacher. She works with the computers and does all the teacher training. The principal's wife is the head person who purchases the computers, does the long term planning, and grant writing. They have systems people who manage the network and help out with large or complicated jobs.

Q. How long have you been working as the computer person?

A. For about three years now.

Q. What do you do?

A. I do the teacher workshops and work in the computer labs. I train them how to operate the computers, use email, make WebPages, and use the software. I like to teach them to do PowerPoint it is fun.

Q. What happens when computers break down?

A. We have excellent computer support from the district people. The director of the computer department is here. Also the number of computers we have in the school makes it easier. There are lots of extras. The are 30 computers in one room plus printers. The other computer area has 29 computers. There is a small remediation lab.

Q. Can the students use the computers to do their homework?

A. Yes, most of the students do their homework on computers. The large lab in the library has extended hours. The students can use the computers in the morning before classes begin, during lunch and after school.

Q. If you had a lot of job orders on your desk how would you prioritize them?

A. We don't have a priority. Well, certain problems are higher priority. We would have to work on the computers that have the heaviest use, like the office computers and those in the labs.

Q. The Exploring Life needs three plug-ins. Would that be a problem?

A. Plug-ins are a problem. We will be tightening up the firewalls so the students can not do so much downloading.

Q. Have you ever used an electronic whiteboard?

A. No, I would like to but I haven't used one yet. (I got the feeling that she did not know about the SmartBoards in business.)

Q. It takes a long time for the students to log in. Is that common?

A. Yes, it does take a long time. Once the site is catched, it works faster.

The conversation deteriorated because one of the graduated students came in with her newborn child.

Hickory High School compared to other schools in the county. Note that the number of students represents those in the graduating class, not the entire school body. There is a remedial school where low achieving students are filtered.

Senior Performance

District	Hickory City	Catawba w/Bunker Hill	Newton Conover
High School Seniors	189	137	126
% of Seniors Receiving HS Diploma	96%	97%	100%
Graduates' Future Plans (% Attending)			
4-Year College/University	68%	25%	55%
2-Year / Junior College	18%	60%	32%
Business / Technical School	5%		3%
Armed Forces	1%	5%	
Work Force	4%	10%	10%
Awards			
National Merit Scholarship Finalists	1		
National Merit Scholarship Semi-finalists			
Letters of Commendation	4		2
Average SAT Scores			
% of Seniors taking SATs	82%	50%	38%
Math	534	524	525
Verbal	525	503	511

In this chart, check out the amount of professional staff that are employed at Hickory versus the other schools.

District Size

District	Hickory City	Catawba w/Bunker Hill	Newton Conover
Lowest Grade Level *	Pre - K	Pre - K	K
Highest Grade Level *	12	12	12
Student Population	4558	3255	2773
Teacher Population	190	135	199
Professional Staff **	308	191	210
Student/Teacher Ratio	23:1	24:1	13:1
Median Years of Teaching Experience	12	15	18
# of Elementary Schools	5	3	3
Average Elementary School Population	450	754	414
# of Middle Schools / Junior High Schools	2	2	1
Average Middle School Population	526	443	612
Primary High School Population	1118	810	796