Improving Student Achievement in Technology
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Goal
Improve student achievement in technology and its applications in other classes through the use of Microsoft and other software and to adjust instruction to meet the needs of various students.

Introduction
Initially my project was going to focus on the use of Microsoft software and Power Point. As time went on, I realized my biggest problem was not using the software, it was getting through to all students. There was a huge gap between ESL and GT students. I decided to focus on narrowing this gap.

As I started the school year at Wakefield High School as a Technology teacher in the ninth grade Foundations Program, I was not quite sure what to expect. This was my first year with a large English as a Second Language (ESL) population. Wakefield High School has a total student enrollment of 1,511. The number of students who receive ESL support is 275. The student population consists of 36.1% Hispanic, 32.1% Black, 18.3% White, 13.5% Asian/Pacific Islander. I had several classes with Gifted and Talented (GT) students, average students, and ESL students in the same classroom. I knew this was going to be a challenge.

The first few months of school I found myself scrambling for more assignments for the GT students and trying to help ESL students individually. At the beginning of this project I wrote general directions on the board for each assignment. I found myself running around the room answering questions or looking at blank faces. My next strategy, reading what was on the board and going into detail by discussing the directions, was not particularly effective either. I found myself answering questions that were on the board or repeating myself continually. Students would seem to forget what I told them and what was on the front board. They did not understand concepts when I discussed them in class. I had to go around the room to each ESL student and try to figure out which part of the directions they did not understand.

Strategies
We started a Power Point presentation for which I used some handouts I had made in a Power Point class I took during the year (see Appendix A). I handed them out with typewritten directions for the project. I read the directions that were on the handout. The results were amazing. All of a sudden, the students were all working. No more panicked looks, no more than one question at a time. All students seemed to benefit from this type of instruction.
I spoke with other technology teachers at Wakefield to find out if they had any suggestions for such a mixed population of students in one class. Unfortunately, my House is the only one at Wakefield with Hilt X students. None of the other technology teachers had classes of such varying levels. I found I was on my own to try to find a reasonable balance in my classroom. I decided to attempt using different strategies for conveying information to students.

It was not until I started printing out directions and reading them aloud that I got anywhere. This concept combined with extra assignments for GT students was the answer I was seeking. All of the students had the same basic assignment. I added “extras” on for the GT students. For example, in their Power Point projects, GT students had to get more pictures off the Internet. ESL students had to supply a minimum number of pictures either from the Internet or Microsoft Clip Art. This eased some of the pressure. If ESL students wanted to get all pictures off the Internet they could.

I also rearranged my seating chart so that an ESL student would always be sitting by a GT student. I encouraged students to work together so if they had simple questions they could ask each other. This had about 50% success rate. Some ESL students would go around the GT student and ask another ESL student. Only half of the ESL students would ask the person beside them.

I was able to create a project in each of the courses. I had a hard time creating a lesson for Biology. At the end of the school year, I had the students create a database listing at least ten primates and their family, genus, and species (see Appendix B). I told students they could do more than ten for extra credit. The ESL students barely got ten. The GT students always want to do extra credit. This kept GT students busy as my ESL students were finishing up their ten primates. This seemed to be the best balance I could find in my assignments. I was concerned that it was unfair. In essence I was only offering extra credit to GT students.

The majority of my assignments focused on English and History. ESL students ran into some obstacles while writing papers or creating projects. The most obvious one was their inability to properly utilize the spell check function. Homonyms such as “their,” “there,” and “they’re” were major problems. Spell check does not catch the improper use of words. If a word is spelled right but used incorrectly, it will skip right over it. On some projects they would not even get the right word. Any word that came up as an option on the spell check function would be chosen. After seeing this occur quite frequently, I decided to have the students peer edit their papers. This created yet another problem.

GT students finish their projects at least one class period earlier than ESL. When GT finished, I asked them to peer edit. By the time ESL students finished the projects were due. Obviously, not everyone got to peer edit. The students who needed to peer edit the most did not get to.

When students were assigned Inspiration projects, GT students had to have a minimum of eight boxes with at least six different shapes and graphics. ESL students were required to have at least six boxes with four different shapes and graphics. I started to modify my plans so that everyone could succeed.
While students were making brochures, I required GT students to get at least two pictures off the Internet. Searching the Internet to find suitable pictures is time consuming but improves the appearance of the brochure. GT students could not use a font over the size 16 in their text. ESL students could use up to 24 font and were not required to get pictures from the Internet. By using a 24 font, students do not have to type as much. The smaller the font, the more one has to write.

Findings

Many ESL students have a better understanding of concepts and directions when they are on a handout in front of them and read to them. The classroom became a much more peaceful place.

The final project of the year, researching “We Didn’t Start the Fire” by Billy Joel, gave me one last chance to try another strategy. I assigned every student a time line, a paragraph on each historical item listed in the verse and a poster display. I grouped GT students together and regular or ESL students together. GT students had to make up lyrics for the 1990’s, put them into a verse of the song and sing it, along with the time line, paragraph’s and poster display (see Appendix C). By requiring GT students to expand on an assignment, I found an even balance.

My students used almost every available software in my class. They created fliers, used on-line encyclopedias and the Internet for research, created Power Point presentations, Inspiration webs, and spreadsheets. GT students used Geometers Sketchpad for Geometry.

Analysis and Reflections

After implementing these strategies I found that most students, ESL and GT, finished their projects before or by the due date. Projects were completed successfully and directions were understood. Many of my ESL students brought their instructions home with them and wrote out their “answers.”

Math projects were completed using MS Works Spreadsheet software. All students were successful in completing math projects. I did an overhead presentation, wrote formulas on the board, and read the formulas out loud. I am not sure if the success of the math projects was due to student knowledge or the way in which I presented the information. I did not have time to further study this idea.

These findings were of paramount value to me. In house two we have all of the Hilt X students. Approximately 20% of our students are Hilt X, another 20% is GT. It seemed that my classes were the only ones with a mixture of both populations. I plan to utilize these findings in all of my classes next year.