Closing the Achievement Gap: What High Schools Can Do to Raise the Performance of Economically Disadvantaged Students

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Abstract: Schools across the country are struggling with low performing subgroup scores. Louisiana schools are no exception and impoverished students in particular are struggling in great numbers, especially in the areas of English and math. Proficiency percentages for economically disadvantaged students remain stagnant across the state. For the most part, principals and teachers have been unable to come up with an answer to address the needs of this subgroup. However, at Ouachita Parish High School, teachers and administration have invested both financial and human capital to enact a change in the expectations for this group of students. While the results of this endeavor will not be known for some time, there is a renewed energy throughout the math department at Ouachita. With quality teachers, ample resources and instructional time, and administrative support, certainly there can be no better environment within which to promote students' success.

What would happen if a school's most highly qualified teachers were used to teach the students most in need of high quality instruction? It is a rather logical question to ask. However, today it seems that veteran teachers are often considered to have "paid their dues". Experienced teachers are often rewarded with positions that feature the gifted and talented, honors, or otherwise "smart" students that come to school eager to learn and without many of the behavioral issues that are commonly associated with students that are considered to be at-risk of academic failure. Although our school is fortunate to have a strong instructional staff from top to bottom, largely because of the widely respected organizational qualities of the district and highly competitive pay, it is likely that many other schools are less fortunate in the distribution of expertise throughout the teaching staff. Nonetheless, we determined that our best teachers should be involved in the instruction of those students most in need.

The students served by Ouachita Parish High School are not unlike students at other large suburban high schools that one might observe. Ouachita is the second largest high school in the Monroe/West Monroe area of northeast Louisiana. Serving grades 9 through 12, the school serves most of the eastern half of Ouachita Parish with an approximate enrollment of 1200 students. The campus reflects the racial diversity of the community with a nearly even 48% of the students from either the White or African-American ethnicities and an additional 1% each from the Asian and Hispanic ethnic backgrounds. A significant number, more than 40%, of the students at Ouachita are economically disadvantaged and receive a free or reduced lunch. Also, approximately 20% of the students receive special education services, split almost evenly between students with disabilities and those designated as gifted and talented. Ouachita Parish High School is accredited by the Southern Association of Colleges and Schools and offers students a variety of academic options including college preparatory, vocational electives, honors, gifted, advanced placement, and dual-enrollment opportunities.

The concept of matching our most highly skilled instructors to our least skilled students arose as our school improvement team poured through five years of school performance data. The trend that emerged from this analysis was that our math scores had become stagnant, neither demonstrating any significant rise or fall from one year to the next. This data analysis also indicated a pattern regarding the specific subgroups that continued to struggle over the five-year period from 2003 to 2007. Predictably, a large number of low-performing students were from low socio-economic backgrounds. Also, although our high school is racially diverse, a disproportionate number of African-American students failed to score at proficient levels in math on the state's standardized tests. Although these patterns exist in many other schools across our

state and nation, we asked ourselves what we could do to help the specific students under our care.

Looking back over the data, troubling trends were discovered in math proficiency percentages for certain subgroups. Where proficiency is determined by the achievement of Basic, Mastery, or Advanced on state assessments, first time test takers from the African-American, Students with Disabilities, and Economically Disadvantaged subgroups have disproportionately underperformed when compared to proficiencies achieved by their counterparts in the Whole School and White subgroups. Between 2003 to 2007, Whole School subgroup proficiency scores on the math portion of the GEE have ranged from 63% to 71% and scores for the White subgroup have ranged from 83% to 87%. These ranges are easily distinguishable from the subgroup proficiency percentages for African-Americans, 41% to 52%, Economically Disadvantaged, 43% to 55%, and Students with Disabilities, 10% to 46%.

If you continue to do what you have always done, you will continue to get what you have always gotten, or at least that is what we have come to believe. We certainly understood that if we are to have any expectation of achieving different and better results, there must be a change in the path we are taking to achieve those results. Recognizing that we needed to take a different approach to the instruction of our lower-performing subgroups, we used one of our faculty collaboration days to bring the problem to light. These meetings are conducted once per grading period allowing staff members to collaborate and brainstorm possible solutions to school improvement issues. During this process, a number of obstacles inhibiting the success of these students were uncovered. An overwhelming majority of our teachers reported that motivating many of our students to complete homework was a tremendous challenge. Failing to complete homework resulted in the students receiving low scores on daily or participation grades.

Additionally, students missed opportunities for important independent practice that would have aided in mastery of the skills that were presented during instruction. Of course, as instruction progressed into new concepts, students that were not practicing independently were getting further and further behind.

Our discussion progressed into an examination of how the school's veteran math teachers were being utilized. Of course, these teachers have been concentrated in courses designated as honors or gifted and talented or those that are otherwise taken by the part of the student population that has intentions to attend college. The students that have struggled with freshmen Algebra I, plod through geometry, sometimes through an additional attempt, and predictably plot a course away from Algebra II, choosing instead to use Financial Math to satisfy their remaining math credit. With the passage of the Louisiana Core 4 Curriculum, students now have to obtain four credits in math in order to attend an instate four-year university. Without a level of proficiency in Algebra I, there is a concern that many of these students may feel that their door to college has been closed, leading to an increased dropout rate and widening of the achievement gaps. Therefore, the goals for this endeavor include improving math achievement on the state's standardized assessments, preempting the dropout process that some of these students often begin after unsuccessful attempts at either Algebra I, geometry, or the high stakes math exit exam, and allowing students more options regarding their collegiate or vocational futures.

The question then, is how to accomplish this. Our solution was quite a simple one. We determined that we could use the newly approved seven-period day to add a supplementary math lab to the schedules of those 9th grade students lacking proficiency in math as established by 8th grade standardized math test scores. Using achievement scores from the 2008 administration of Louisiana Educational Assessment Program (LEAP), incoming freshmen were ranked according

to their math proficiencies. With approximately 90 incoming freshmen having failed to score at or above the Basic level, the creation of 6 sections of the lab was required in order to accommodate all of the students. In cooperation with the school's administration, it was quickly decided that these sections should be distributed among our veteran staff. By distributing students in this manner, they will in essence receive a 2-hour block of instruction from the most talented teachers our school has to offer.

The selected teachers will have a two-fold challenge, attempting to instill a sense of hope in each student while working to bring their skills up to grade level and develop proficiency in the content standards of the Algebra I curriculum. Developing a rapport with these students will allow them to see the genuine interest the teacher has in them and to believe that everything possible will be done to ensure their success. The extended class period will allow teachers and students to build this relationship, create a bond, and lower walls of defense. Once these walls are down, students will be much more receptive to instruction.

While developing these relationships, teachers present the Algebra I curriculum according to state and district guidelines. During the lab time, several methods will be used to produce a successful, confident student. To begin with, students will be provided all the supplies necessary for both class/lab and taught how to organize them and keep them that way. Using the Cornell note-taking strategy as a model, students will be taught how to take "math" notes and use them for studying, review, and assessment. This strategy can be researched on the Cornell University website at http://lsc.sas.cornell.edu/LSC_Resources/cornellsystem.pdf. This resource and others will be available in mid-September on the Ouachita Parish High School Edline pages at: https://www.edline.net/pages/Ouachita_Parish_High_School/1546708954377724866.

Because these at-risk students are often those that seldom do homework, most of the independent practice will begin during the lab time with teachers providing assistance and encouragement. This is expected to be a critical component of this endeavor as teachers will be developing independent study skills and individual accountability during the early stages of the first semester. Also very important to these students will be the ongoing assessments of strengths and weakness, as well as the immediate feedback provided will be invaluable for both teacher and student. No longer will either have to wait for an assessment item to be scored to know the extent of the student's knowledge of each skill.

In addition to varied instructional strategies, teachers will be able to incorporate web-based instruction and assessment as well. Star Math, Accelerated Math, and Plato, in addition to other resources, will be utilized to determine the true depth of each student's knowledge and accurately identify deficiencies. These programs provide immediate assessment of prior skill knowledge, as well as, a wealth of supplemental practice to provide adequate opportunities to truly learn it. Teachers will assist students by administering pre-tests to identify the specific skills requiring additional attention. Using the web-based resources, these can be addressed with the automatic generation of skill-specific materials and scoring of all student work. With these automated assessments and feedback, teachers are afforded more time for instruction and opportunities to use assessments in the student learning process. As objectives are met, students continue at their own pace, and are able to work independently without having to wait on others or the teacher before continuing.

Assessment methods must also evolve in order to reflect progress more accurately. Instead of the traditional weekly/unit test, smaller, more frequent assessments will be given after each lesson during the lab time to test individual skills and serve to link students to the upcoming

unit. Cumulative tests will be given over a span of four or five lessons to tie skill sets together. Also, as at-risk students are often deficient in fundamental math skills, routine timed tests will be used to reinforce skills, such as multiplication facts and addition/subtraction of integers.

Teachers will also develop test-taking skills during the lab times. Reading and understanding multiple choice, short answer, and constructed response items will be another area of emphasis for students in this class as reading comprehension and problem-solving abilities contribute to their academic deficiencies. Students' active participation in this whole child approach will promote understanding and confidence while dissipating the fear and discouragement these students have come to associate with math.

Summary:

These are exciting times at our school as the teachers charged with the instruction and mentoring of a group of at-risk students begin this process with great enthusiasm and passion. For the first time in a long time, there is a sense of direction and purpose in providing services to struggling students, most from low socio-economic backgrounds, a subgroup that has historically experienced an achievement gap when compared to other subgroups. Coming to grips in a practical sense that the instructional approaches that are successful with one group of students do not necessarily equate to the academic success of another is an important revelation. It is certainly our hope, however, that the efforts taken to promote the success of one at-risk group will benefit the quality of instruction for all.

About the authors

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