CASE 4

Using Assessment and Student Interest Data to Inform Differentiated Instruction in an Inclusive Classroom

Prereading Focus Points: A middle school teacher attempts to bridge the gap between her students' mathematical aptitudes and instruction based on the State Academic Content Standards representing her district's planned/designed curriculum. The author takes into account the preassessment of students' content area knowledge and skills as well as the differentiated instruction to meet the needs of all students in her inclusive classroom. Data-driven instructional decision making and curriculum mapping support her efforts.

Level: Middle school

Content Area: Math

Setting: Urban

Spotlight on . . .

a) Accurately quantifying students' content area knowledge and skills in an attempt to increase standardized test scores;
b) Identifying and providing support and resources to meet the needs of students of varying abilities based on enhanced awareness of their background.

Key Terms: Invisible culture; standards-driven curriculum; Saxon Math; Continuous Improvement Plan; short-cycle assessment

BACKGROUND INFORMATION ABOUT THE TEACHER AND THE CONTEXT

Marlena is a fourth-grade teacher in an urban setting—a large Midwestern city that is very diverse and whose students face the typical range of problems

of 21st-century inner-city schools. For 6 years she has been working with sixth-grade gifted students in math and science. The sixth-grade class is a self-contained gifted unit. This year she opted to move to a fourth-grade regular education classroom with a cluster group of gifted students (4 students in the formal program) and students with Written Education Plans (WEPs) in specific areas for a total of 11 students identified with areas of giftedness. The class also contains 4 students with a 504 plan who have been diagnosed with attention deficit hyperactivity disorder, in addition to 3 students who have Individualized Education Plans (IEPs)—1 for other health impairment (OHI), who has an aide assigned to him, and 2 others who have a learning disability. The school practices total inclusion. Therefore, students with IEPs are not pulled out for individual instruction. Instead, the specialist comes to their class to coteach the lessons and make the necessary modifications. The students in the formal gifted program are pulled out of class for 3 hours each week for small-group instruction.

The students have a broad range of abilities when it comes to mathematical aptitude. The continuum ranges from problems with basic single-digit addition to being able to solve multiple-step problems, decipher order of operations, and solve algebraic equations.

Marlena believes that teachers should tap into what students know and are able to do as a starting point in their professional responsibilities in the classroom. Additionally, teachers should be aware of the social conditions of their students and how the school environment promotes their abilities. This further indicates that teachers must be cognizant of the invisible culture of their students. Marlena feels she must understand the nuances and subtleties of a child's culture, background, and upbringing to fully understand the child and to see what the child holds valuable. Moreover, she sees the school as a community that engages parents as an integral part of that community. With this in mind, Marlena believes that the curriculum must be explained to parents in order to be effectively implemented in the classroom.

Invisible culture is the sum of all aspects of one's cultural characteristics not available to conscious awareness.

BACKGROUND INFORMATION ABOUT THE CURRICULUM

Marlena is currently using the State Academic Content Standards (SACS) as a basis for the identification of instructional objectives. The State Department of Education (SDE) states in the SACS for mathematics that every student should have access to a standards-driven curriculum that challenges and promotes learning. The SDE further states that curricula need to be adjusted based on the full range of student needs, from learning disabilities to giftedness and talent.

The SACS also stipulate that mathematics should be taught by making real-world connections. Teachers should develop lessons and assessments that are considered relevant to students. The SACS focus on the fact that learners must be engaged in real-life experiences. Whether content is to be introduced before context or whether context is to be addressed before content is all at the discretion of teachers. While the SDE attempts to make this appear child-centered, the reality is different. If one looks at the Writing Team for the Mathematics Standards, one will notice that the team comprises business leaders, teachers, and a few parents. Students and child development specialists are noticeably absent. Society is dictating what the child will learn and when. This makes one wonder about the driving force behind this type of curriculum—the knowledge and skills necessary to pursue efficiency upon graduation and joining of the workforce.

Recent school reform efforts mention **standards-driven curriculum** as an example of integrating content standards into teaching, learning, and assessment.

The school board has adopted the SDE's Academic Content Standards as the main curriculum for the district. It has also adopted the Saxon Math series as the planned/designed curriculum. The principal of the school has stated that Saxon materials must be used in daily lesson plans. It should be noted that the school has a curriculum review committee meant to explore the relationship between the Saxon Math series and the SACS. The committee's recommendation, approved by the school board, emphasized a timeline for the implementation of the Saxon lessons. Therefore, the committee created a document called the Math Task Force Advisory, which details the base timeline as well as the supplemental materials needed, in addition to specifying when to implement the supplementary information.

Saxon Math is a K–12 program that relies on a gradual approach to the introduction of new mathematical concepts and skills.

The Continuous Improvement Plan (CIP) for the school has stipulated the goal for fourth grade is to have 75% of the students pass the State Mathematics Achievement Test. The baseline data are taken from the State Fourth-Grade Proficiency Test results from the previous year—the passage rate for the fourth graders was 46%. The district is in a financial crisis, as are many other districts. Taxpayers, as stakeholders, are looking at test scores to deem if their money is being spent wisely on schools. They want to know what schools are doing to increase test scores. Because of the information presented in the local and national media, many feel that standardized test scores are the only effective measure to see if children are learning. The school's Building Management Team is hearing this pressure and creating the CIP accordingly.

Continuous Improvement Plan (CIP) represents a document that connects the mission and vision statements, as well as specific benchmarks and indicators, at the district level with strengths, areas of improvement, actions, expected outcomes, and a timeline at the school level.

PROBLEM

Marlena is obviously faced with a very diverse student population and a building management team driven by a clear task to improve test scores. She has several gifted children not being taught at a level appropriately paced for them, which means that their special needs are not being adequately met. The students identified as gifted in the area of mathematics have scored in the 95th percentile on the California Achievement Test (CAT). There is a high probability that these students will pass the fourth-grade achievement test based on the previous test scores. At the same time, the students with learning disabilities scored significantly lower on the CAT. The problem with these types of tests is that they do not specifically show a child's strengths and weaknesses according to the benchmarks. While the IEPs adequately specify the students' needs, they are not aligned with the SACS for mathematics at the grade level. Oftentimes, these IEPs require time out of the regular class and into the resource room. The school's policy for special education is full inclusion where the special education specialist comes into the room to help teach the lesson.

The complaints heard often in class and at parent–teacher conferences are as follows:

1. My child has an IEP and is required to be in the resource room, so why is he/she being taught in the regular education room?
2. My child is bored. My child is a math genius. What are you going to do for my child so he/she is not bored?
3. My child is lost. The homework is too hard. Where can I get a tutor? Can my child have a learning disability? When can you test my child?
4. What is going to be on the achievement test? What are you doing to get my child ready for the achievement test?
5. What math program are you using? Is it in line with the SACS?

PROBING QUESTIONS

1. How could the mathematical knowledge and skills of each student be determined accurately?
2. How could individual instruction for enrichment and remediation be provided?
3. How could areas of additional assistance be identified before the achievement test is administered?

PROPOSED SOLUTION

Because SACS and achievement testing are a fundamental component of today's curriculum, any solution needs to explore the full engagement of learners based on their academic readiness. In this light, the proposed solution would involve the following steps:

1. Determine the proficiency level for each fourth-grade student at the beginning of the year by taking into account the corresponding benchmarks—number sense, measurement, geometry, functions and algebra, patterns, data analysis, and mathematical process. This can be accomplished by administering a pretest to be followed up with a posttest. In this case, the achievement test could be used as a posttest. In an attempt to monitor all fourth graders in the school, the math department will write a pretest that combines five (or more) questions geared toward identifying strengths and weaknesses in each benchmark. It would be a good idea to write a grant proposal so that the teachers are compensated for their time needed to write quality pretests and short-cycle assessments.
2. Using these data, individual teachers can then work with flexible groups. For example, those students who have mastered the geometry pretest will be grouped together for enrichment opportunities, and those who need additional help will be grouped together for remediation. This flexible grouping arrangement allows those students to work together on a project that is standards-based but is at a level that is appropriate and comfortable for them, whether they are gifted or learning disabled.
3. The teacher would also utilize short-cycle assessments throughout the year to ensure the students are learning along the way. These short-cycle assessments will be written by individual teachers or collaboratively by the whole math department.

This hopefully will prevent students from falling through the cracks by providing them with the necessary additional assistance, remediation, and diagnostic work. At the same time, it will provide enrichment opportunities for those students who have mastered the concept. All this will be done to ensure that all students show growth and progress. The pretests and short-cycle tests will document that children are making annual yearly progress. This information could be presented to the Building Management Team to show progress and to help refine the school's CIP.

4. The special education teacher assigned to the class would be working with small groups—not only for those students who have special needs but also

for those students who are having trouble with a specific concept or skill specified by any given benchmark. By doing this, they could determine whether or not a student should be tested for a learning disability. The gifted intervention specialist would also be utilized to provide special activities to develop the talents and abilities of the students who have been identified as gifted. The regular education teacher would then be working with the rest of the class to make sure the content is mastered. The special education teacher, along with the Intervention Assistance Team, will rewrite the IEPs to make sure that students are included in the regular education class and are not pulled out to the resource room unless there is clear evidence that the latter is the least restrictive environment for a particular child.

Individual teachers as well as the whole math department will use the district's Math Task Force document as an aid in instruction to make sure the Saxon Math series adequately prepares students for the short-cycle assessment as well as for the achievement test. Additionally, the classroom teacher will design and implement a student interest survey to gather information about the students' background in order to understand their culture (both visible and invisible) and to gain insight into their learning styles. This information will be utilized when planning learning experiences for them in a way that is tailored to their needs. If children are engaged and feel a personal connection to the information presented, they will feel that they have a say in what is being taught and thus become more actively involved in the educational process. Because a child's interests and needs change throughout the year, the survey needs to be updated each grading period. This information could be used to map out the curriculum for the school year.

EXPECTED OUTCOMES

This plan is intended to allow for flexible grouping and for individualized instruction. It would also encourage teachers to document their students' specific strengths and weaknesses related to the expected content area proficiency. At the same time, teachers would be able to show parents evidence related to where their child is in terms of growth and progress in the area of mathematics. The special education specialist would be a more integral part of the class as he or she would be working with a variety of children, not just the ones with IEPs. The gifted intervention specialist would also be provided the opportunity to work with children other than the ones in the formal program.

It should be noted that this plan calls for little or no money. The initial investment of time to produce quality pretests and short-cycle assessments could be a stumbling block for some, and that is where a grant opportunity comes into play. Even if a grant is not an option, individual teachers, students, and the whole school would have much to gain from implementing this plan.

Marlena will be better equipped to answer the many questions raised by parents and community members because she will have data to support her choices for curriculum implementation. It is ultimately the teacher's prerogative to determine the scope of the taught curriculum based on the planned/designed curriculum. By identifying students' strengths and weaknesses, the teacher could focus on involving students in the selection of projects geared toward enhancing strengths and correcting deficiencies. Once a teacher understands where each child is academically and socially, objectives can be selected and learning experiences can be tailored to the interests of the child. Time spent on sequencing and organizing the learning experiences can be maximized. Lastly, assessments—both summative and formative—could be administered throughout the year and will provide a clearer vision of what the child has learned and mastered.

Short-cycle assessments are formative in nature; they do not take a lot of time to implement, thus providing teachers with data related to the progress of their students.

POINTS TO PONDER . . .

What steps would you recommend to any curriculum team (at a level of your choice) in its attempt to analyze how the planned/designed curriculum aligns with preset content standards while accommodating the full range of student needs through differentiation? What would be a useful template that could be implemented as support for the analysis? Within this template, what should be the starting point? How should work progress? What would be an endpoint that indicates the opportunity for piloting a plan of action based on the findings of the analysis process?

QUESTIONS FOR ADMINISTRATORS

Given the prominence of accountability requirements in today's field of education, what are some of the specific actions you would take to involve your school community in the analysis of assessment data (standardized as well as alternative/authentic) based on which an enrichment curriculum might be strengthened? The same question could be asked when dealing with remedial

instruction. What means of communication would you use as school principal to maintain the momentum of such curriculum revisioning work?

IN-CLASS ACTIVITY

In groups of four to five members (representing different content areas or specializations), draft the outline of a daylong professional development opportunity on differentiated instruction for both special education and regular education teachers in a district that you are familiar with. As an alternative, your group could focus on alternative means of assessment to be used in inclusive classrooms.

To identify the specifics of the student body in your chosen school district, you may have to access relevant Web-based resources in preparation for this activity.

As a group, prepare an oral presentation of the highlights of the professional development activity in question—start, main content, and end—paying attention to assessment and evaluation of the whole activity. You may also want to generate some ideas about the creation of a repository of materials and resources that participants would have access to at the conclusion of the professional development opportunity.

SUGGESTED READINGS

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