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Changing the Subject, Or, Would You Hire a Good Clarinet Teacher to Teach Your Child the Violin?

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OFFICIAL GOALS FOR MATH INSTRUCTION³
(Emphasis added.)

Goal #1 is that students will “develop an appreciation of and a **positive attitude toward mathematics.**”

Goal #2 is that students will develop an **understanding of mathematics**: concepts, properties and processes.

Goal #3 is that students will “acquire mathematical facts and skills.”

Goal #4 is that students will “develop the ability to express and interpret mathematical ideas and relationships.”

Goal #5 is that students will “develop the **mathematical reasoning ability** required in problem solving and decision-making situations.”

Goal #6 is that students will develop the ability “to apply mathematics in personal, societal, technologi-

cal, scientific and career settings.”

Unfortunately, it is the rare middle school which has the expertise to make a serious effort to implement these goals.

NOTES

¹ This is one of the major conclusions of *The Underachieving Curriculum* by Curtis C. McKnight et al, a national report on the Second International Mathematics Study sponsored by the International Association for the Evaluation of Educational Achievement (1987). This report is the most thorough analysis of mathematics education in American schools. The name of the report comes from the report's conclusion that the mathematics curriculum in American schools is an **underachieving curriculum**.

² The data on how teachers use class time is listed in *The Underachieving Curriculum*.

³ These goals are presented and discussed in the wonderful booklet: *Mathematics — A Maryland Curricular Framework*. This framework was developed by June M. Danaher, specialist in mathematics, Maryland State Dept. of Education. The superintendents of the county public school systems in Maryland have signed off on these goals.

Changing the Subject, Or, Would You Hire a Good Clarinet Teacher to Teach Your Child The Violin?

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Roughly, the first (milder) half of this article appeared in the Forum column of the Prince George's Extra Section of the Washington Post, April 21, 1999, Page 4. Parts enclosed in [] were not included.

Sarah McKinney-Ludd, a language arts teacher in Prince George's County, said her assignment to teach a middle school math class “robbed kids of a year of education. I stayed up every night for 180 days,” she said. “I didn't sleep. I can't sleep because you have to stay ahead of the kids...It is emotionally bankrupting.” (Linda Perlstein's front-page article, The Washington Post, Feb. 15, 1999).

Not assigning music teachers to teach math or vice versa is a no-brainer, except to too many school administrators and the school board.

Hospitals do not let a lung specialist fix broken bones on a slippery, icy day when there is an overload of patients with broken bones. Building contractors do not have plumbers and electricians filling in for the others' jobs. Parents never hire a good clarinet teacher to teach a child the violin.

That the head of a middle school math department be a certified math teacher is another no-brainer, except

to too many school administrators and the school board. In the Prince George's County public school system, the official mathematics leaders in middle and elementary schools are appointed at the full discretion/whim of the principals. No knowledge of mathematics required. After all, the school is the principal's fiefdom.

The lack of knowledge of mathematics by heads of middle and elementary school math departments had prompted the PGCPSS to write a grant proposal requesting federal funds to pay for mathematics instruction for these math departments' heads. The proposal stated that a reason for the deficiency in knowledge of math was that principals were under no obligation to choose teachers knowledgeable in math as the heads of their middle and elementary school math departments.

Some time ago, a friend from Mitchellville complained that a correct answer was marked wrong on her child's math test paper. The teacher's response was that she was a history teacher, and she was doing the best she could with the math class.

Occasionally, an art teacher will do a good job teaching math (there is some geometry in art), but this is the rare exception. [A teacher, teaching out of subject, will frequently have trouble explaining the material. They will often teach in a dull, follow-the-dull-textbook manner, even those who are exciting teachers of their own subjects. Following a half-decent textbook might be semi-tolerable for a good teaching-out-of-subject teacher. But textbooks commonly range from terrible to horrific, which traps the teacher trying to learn the subject from the students' book. It also traps students trying to compensate for the teacher by reading the book. Staying up every night for 180 days, as McKinney-Ludd did, is not a viable solution, and even that did not result in a successful class. Often, it is a case of sink and swim except here the students are sinking while the principal swims—he succeeded in assigning a teacher to each class, his butt is covered.]

The first year brings all sorts of new and difficult challenges to a new teacher. It is a no-brainer not to add to this daunting burden by adding a class preparation in a different subject. It is a double no-brainer not to add two class preparations in two different subjects. [Rookie biology teacher Mike Maerten is teaching two

different math courses in addition to biology at Wilde Lake High School in Columbia.]

The PGCPSS has a crisis in recruitment and retention of teachers. Placing teachers in the loathed, high-stress, emotionally bankrupting situation of teaching subjects they do not know strongly encourages/pushes teachers to leave our schools. This is highly counterproductive, at a time when the PGCPSS should be doing everything to keep teachers.

The part below was not printed.

"Hold teachers accountable for the learning (or lack of learning) of their students" has become a popular slogan for the 1990's. But it is absurd to hold a language arts teacher accountable for the lack of learning of students in a math class.

It is not just that Ms. McKinney-Ludd's students were robbed of a year of math class, but the following year they walked into a trap; they "progressed" to the next math course in which they were expected to know the math of Ms. McKinney-Ludd's course. I call this "getting educationally beaten up;" it occurs when students are placed in a non-viable learning situation like having to learn Grade 8 math which builds on and heavily uses the Grade 7 math they did not learn. They stand little chance; they are trapped.

The middle school teachers' knowledge of mathematics may be crucial to your child's success in high school mathematics. In California a survey by Ms. K. Culler revealed that among Grade 8 Algebra I students who were taught by a teacher who did not have a math major or minor in college, only 20% did well in Algebra 2 two years later.

Algebra classes, taught by other than math teachers, are often a waste of the taxpayers' money and of the teachers' and pupils' time. Worse yet, they are counterproductive since the main results are:

- Pupils with many misconceptions about algebra. The misconceptions become bad habits, difficult to remedy. (A natural consequence of the teacher's difficulty in explaining algebra)
- Pupils entering the next math class with low level and insufficient knowledge of the math "taught" in the previous math class. This is a trap and a

non-viable learning situation

- This results in many students “getting educationally beaten up.” Which in turn, results in pupils with greatly reduced self-confidence,
- Pupils who hate math.
- Pupils (even bright pupils), their parents and guidance counselors who incorrectly believe that the pupils are poor learners of mathematics.

The natural consequence of this is that the students are misguided to low content mathematics and science courses in high school, thereby limiting their career choices. Not desirable in this technological era.

In the 1990s, high school Algebra 1 has become my campus’s biggest math course, even though all the students had passed Algebra 2 in high school, and even though UMCP has a selective admission policy. High school algebra classes not taught by teachers with state certification for math contribute to the many high school graduates who need to be retaught high school Algebra 1 in college.

Even with certified math teachers, the students in the PGCPSS are not learning much math. It is a no-brainer not to make a bad situation worse by assigning non-math teachers to teach math.

Principals argue that they need the flexibility to assign teachers where needed (whether qualified or not), otherwise many classes would have to be enlarged or canceled. This sounds like our children’s education is being held hostage. I believe it is better to cancel a class than to have a counterproductive one where children’s education gets mucked up. I would strongly prefer that my child be in a class of 40 students with a knowledgeable teacher than in a class of 25 students with a teacher half ignorant of the subject (teachers with oversize classes should receive extra pay).

Principals, concerned about filling classes and the school systems’ teacher retention crisis, should be treating good teachers professionally, not shabbily. Last year, the principals’ union complained that “[the CEAs are] kind of bullying [principals] around. It is

disrespectful, unprofessional treatment” (PG Journal June 24, 1998). The CEAs are also principals of high schools. A CEA who is bullying principals is probably terrorizing teachers. A decade ago, there was an unofficial parents group in Greenbelt, whose self appointed task was to defend the good teachers from the principal (now retired) of ERHS. Considering the retention difficulties, the school board should order the removal of bullying principals (incompetent ones also).

Last year, the PGCPSS started a new open information policy of providing parents with more information about the schools. I challenge the PGCPSS to tell the parents what percent of classes at each school are taught by teachers certified in the subject; the advertisements for magnet programs should tell the parents what percent of classes at each magnet program are taught by appropriately certified teachers.

Time for the PGCPSS school board to follow Washington D.C. and Virginia by prohibiting this practice of assigning teachers to teach classes outside of their certification. The education of our children is too important to be left to the principals. Some common sense restrictions need to be imposed. Time to put children first, not principals.

Time for the PGCPSS school board to make state certification as a mathematics teacher a requirement for the chairmanship of a middle school mathematics department, same for all subjects,—even though this would tread on the principal’s prerogative to hire and assign teachers in any manner that suits him/her. Time to put children first, not principals.

To the PG state delegates, who are looking for things to legislate to save our schools: legislate a requirement that heads of middle school math departments and teachers of math classes be certified in mathematics; same for all subjects. This will be good for the entire state. Also provide funds to pay for teachers to take additional college classes which lead to state certification.