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More math = more dropouts

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My Turn

Dec. 29, 2006 12:00 AM

The best essay I read on student intelligence uses horseracing as a metaphor. Some horses are good on soft tracks; some are good on hard tracks. No horse is good on all tracks.

Some students are math-oriented. Others have talents in other areas. I am math-oriented and received college credit in for a calculus course taken in high school. But I have known many successful people who are not mathematically inclined, and many of their job categories will continue, even in a technological society.

Good policy often means fighting both extremes: first, supporters of mediocrity who want to eliminate AIMS, then those who want to make *everyone* an engineer and who will ultimately do more harm than good.

I have talked at length with teachers who teach remedial elementary algebra to high school juniors and seniors who have previously failed the AIMS test. They search for different ways of explaining the same concept, and the students struggle to pass the AIMS test by the skin of their teeth. If three or four years of math are required, these students will surely be high school dropouts.

An article in *Education Week* states: "Researchers from the United Negro College Fund asked high school dropouts why they dropped out. With surprising consistency, a majority of participants said math."

According to six national studies, increasing the math requirement, without an "opt-out," significantly increases the dropout rate.

Some people say that the study of math is necessary not only for future occupations but to teach logical thinking. I agree.

The place to start is in undoing destructive "reforms" in existing math courses. The

best way to teach logic is through Euclidian proofs in geometry. But the National Council of Teachers of Mathematics made changes in 1989 that were misunderstood, that caused logical proofs to fall through the cracks.

We will be strengthening the standards in all of our math coursework.

I strongly support strengthening K-8 mathematics, with algebra in eighth grade, and four years of mathematics as the expected program, provided there is an opt-out for those not mathematically inclined. Some of them may have literary, verbal or artistic skills in excess of some of those on the P-20 Council and, provided they can pass AIMS, they should not be forced to consider "dropping out" as a solution to a higher math requirement.

The writer is Arizona superintendent of public instruction.

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