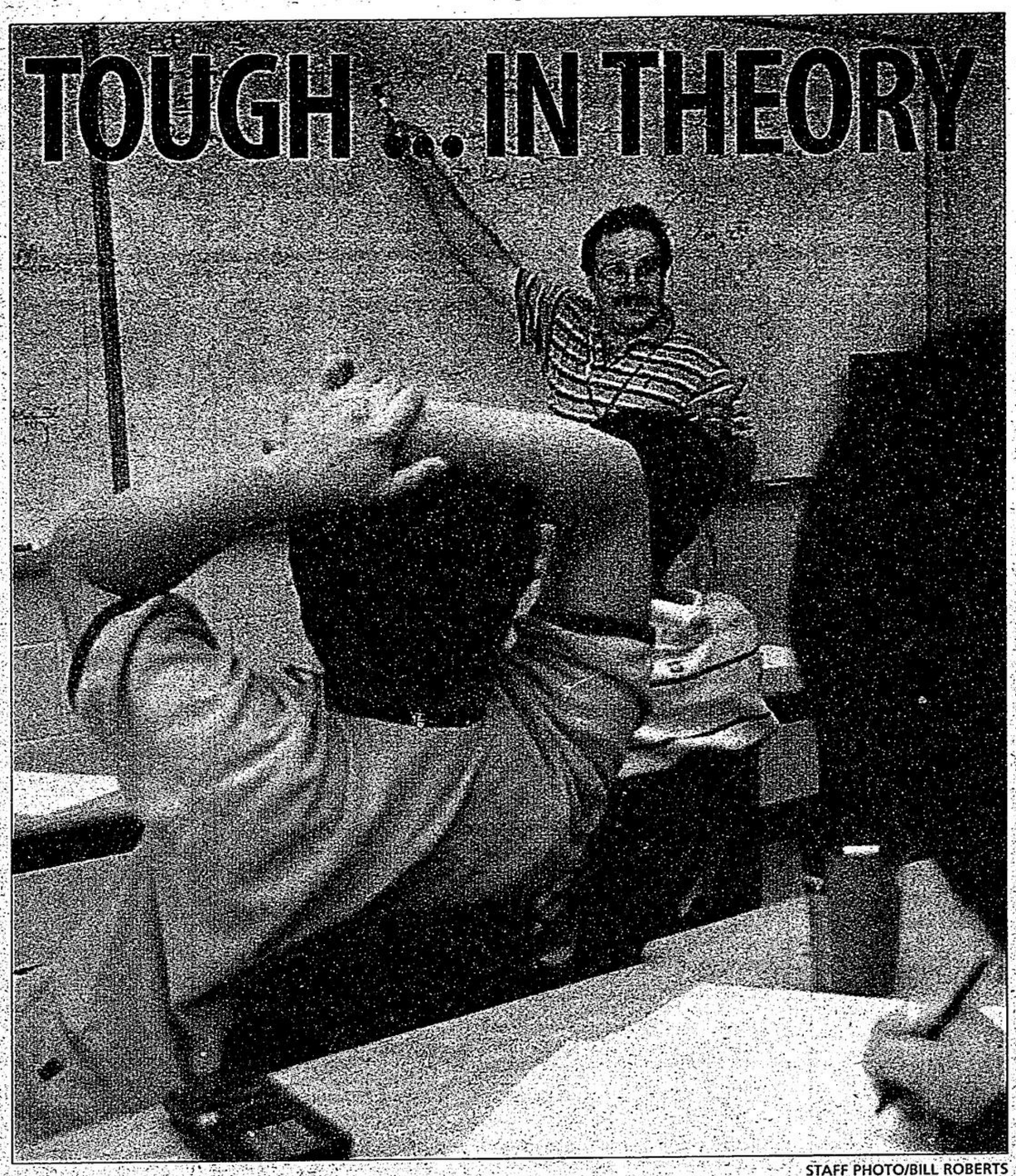
+ - = - PROBLEMS ... with math

FINAL OF A TWO-PART SERIES

TOUGH ... IN THEORY



STAFF PHOTO/BILL ROBERTS

Maple High School math teacher Dave Bocknek taught Grade 12 students calculus equations throughout the summer. Many students find the subject confusing and out of touch with real life.

BY CAROLINE GRECH
Staff Writer

Is your teenager stressing about math class this year?

There may be good news for students who are struggling to pass arithmetic.

Many students heading to school this week will find math class a little easier to understand, thanks to an adjustment to the high school curriculum.

For many students, abstract concepts are a major stumbling block, so educators are removing these theories.

Problems with understanding arithmetic can be boiled down to a few things, Unionville High School math teacher Louis Lim said.

Chief among them is the lack of relevance to students' lives, combined with weak numeration skills, said Mr. Lim, one of the educators commissioned to study the math curriculum for Ontario's Grade 9 and 10 students.

"We need to get students to understand math, not just memorize," Mr. Lim stressed.

The former curriculum required teachers to cover 61 specific expectations and teachers had to cover the material whether or not students understood it and to prepare them for material on EQAO tests, Mr. Lim said.

Educators say the pressures of a revised curriculum forced them away from having students work in groups to investigate and research topics. Instead, they say, they were forced to stand at the front of the class and work out a problem with students on the board.

This method was not working.

Now, less material will need to be covered giving teachers and students a little breathing room and more time to absorb what they are learning.

The problems began when the 1999 course curriculum was designed. Grade 9 and 10 academic and applied courses had the same material but were taught differently.

Grade 9 applied students — those not expected to go to university — were having difficulty grasping the material, said Kathryn Stewart an intermediate, senior mathematics literacy consultant for the York Region District School Board.

"The new curriculum takes out the abstract and beefs up the concrete aspects of math," Ms Stewart explained.

But at least one person isn't a fan of the change.

Education critic and Oak Ridges MPP Frank Klees — a member of the Tory government that adopted the curriculum change in 1999 — said making the curriculum easier is a cop out by educators who aren't innovative or creative when teaching mathematics.

"I think (making it easier) is wrong. It may be welcomed by some students and by some parents but, at the end of the day, it's not the right thing for Ontario students," Mr. Klees said.

Rather than dumb down the workload, the real way to achieve the required 75-per-cent pass rate is to motivate students to work harder, Mr. Klees said.

The 1999 curriculum was designed and implemented to raise the bar for Ontario students to allow them to be competitive on both a domestic and international level, Mr. Klees said, adding the 1999 curriculum was designed by teachers across the province.

"We had to bring Ontario education in line with the rest of the world."

And at least one York Region student agrees math courses are too easy in Ontario high schools.

"I got 93 per cent in math. They should make it harder," Grade 10 Thornhill student Sadaf Mehdizadeh said.

Immigrating from Iran with her family, Ms Mehdizadeh said students at the Grade 11 level in Ontario do the same work students in Grade 9 do in Iran.

As for problems students encounter trying to adjust to the new curriculum, Mr. Klees chalked it up to being a part of life.

"Struggling is all part of realizing a goal," Mr. Klees said. "This sends the message, if you can't pass, we'll make it easier for you."

Mr. Klees also dismissed claims a shortened high school curriculum could be exacerbating the problem by forcing more material into one less year of learning.

"The reality is that we are the only jurisdiction that had a five-year program," Mr. Klees said, asking why Ontario students need an extra year compared to students in other provinces.

Ms Stewart disagrees.

By making the curriculum more rigorous, some students got lost in the shuffle and lessons weren't relative to their lives.

"They weren't being realistic. You need to start with where the students are at," Ms Stewart said, adding not everyone learns math the same way.

Research shows students learn better when working with others, Ms Stewart said.

The new curriculum gives teachers more time to get through all the necessary expectations of the courses while, at the same time, allowing for students to work together, she said.

CAN YOU SOLVE THESE PROBLEMS ?

Grade 9

Q. A video rental company has two monthly plans. Plan A charges a flat fee of $30 for unlimited rentals; Plan B charges $9, plus $3 per video. Students can use a graphical model to determine whether plan A or plan B is the better deal.

A. If you rent less than seven movies a month, then plan B will save you money; to be exact, plan B will save you $3 for every movie less than seven movies a month. If you rent no movies, you will save $21 (but have wasted the $9 plan fee!)

On the other hand, if you rent more than seven movies a month (an average of two or more a week) then plan A will save you $3 for every movie after the seventh movie that month.

Grade 11

Compare the results of making an annual deposit of $1,000 to an RRSP, beginning at age 20, with the results of making an annual deposit of $3,000, beginning at age 50.

Given:

1. The RRSP will be drawn upon as a source of income, without any additional contributions at and after age 65.

2. Each deposit is made on the birthday of the investor and interest calculated at the anniversary of the deposit. The final deposit is made on the 64th birthday. A total of $45,000 is invested in both scenarios.

3. The RRSP earns compound interest.

4. An interest rate of 10 per cent is a good rate of return for a long-term investment. An interest rate of 5 per cent is a very conservative rate of return for a long-term investment. An interest rate of 1 per cent is an extremely low rate of return for a long term investment.

A. For each interest rate and compound period, beginning at age 20 and depositing $1,000 a year yields more money at age 65 than beginning at age 50 and depositing $3,000 a year. The table also shows the higher the interest rate, the greater the difference between the two scenarios. It also shows the more frequent the compounding, the greater the difference. In conclusion, regardless of interest rate or compounding period, if you are able to make 45 annual deposits of $1,000 to an RRSP, beginning at age 20, you will make more money by the age of 65 than you will if you make 15 annual deposits of $3,000, beginning at age 50.

For part one of the series, go to www.yorkregion.com and search Caroline Grech.

Do you think making the math curriculum easier is the right move? e-mail jmason@yrng.com