SURVEY OF TEACHERS WHO ARE TEACHING THE NEW GRADE 12 U CURRICULUM AND HAVE TAUGHT THE OLD OAC CURRICULUM

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Each question provided the following options:

MUCH WORSE	SOMEWHAT WORSE	ABOUT THE SAME	SOMEWHAT BETTER	MUCH BETTER

Teachers were also invited to add comments after each question.

How do your current students compare to your past OAC students in terms of basic skills preparation for this course?

MUCH WORSE	1
SOMEWHAT WORSE	11
ABOUT THE SAME	2

Basic Skills - Comments

- The 9-11 curriculum has too much content, so we do not spend enough time on skills such as factoring
- Algebra skills are weaker
- Some algebraic weakness when working with formulas
- Virtually no exposure to proof
- Weakness in algebraic simplification and rationalizing denominator
- Students from 11U have better skills than those from 11U/C
- Students who have been taught the "why" have better skills than those who have only been taught the "how".

How do the problem-solving skills of your current students compare to your past OAC students?

SOMEWHAT WORSE	8
ABOUT THE SAME	6

Problem Solving - Comments

- Some are excellent but most are weaker.
- Students have difficulties coming up with appropriate strategies
- Strategies have been taught more formally than in the past, but students have more difficulty deciding on the appropriate strategy.
- They do not see the connection between current problems and past lessons. The concept of "strategy" is non-existent. They seem to want to take a "rote" approach to Calculus.
- Many students suffer from their lack of skills in exponents, radicals and simple algebraic manipulation, and maturity in seeing the depth of a problem.
- Takes lots of training – some just drop
- About the same, but in MDM4U, students have much weaker problem solving skills. MDM has been labelled the "easy 4U math course" and is attracting many students looking for an easy credit.

How do the study skills of your current students compare to your past OAC students?

MUCH WORSE	1
SOMEWHAT WORSE	11
ABOUT THE SAME	2

Study Skills - Comments

- **Some are looking for a gift – "this (MDM4U) is the easiest math", some don't do homework, lack ambition, can't get assignments done.**
- **The current grade 12s are less mature and have less spare time due to pressure to finish in 4 years.**
- **Have not yet formed study groups, They are not aware of usefulness of models (e.g. sample solutions, old exams). Time management just beginning to develop.**
- **Fewer seem to complete their homework**
- **Homework often incomplete. Assignments late with no concerns over consequences. Students are not forming study groups.**
- **I do not believe that the majority of students really concentrate on their studies or homework.**

How does the success rate of your current students compare to your past OAC students?

MUCH WORSE	1
SOMEWHAT WORSE	6
ABOUT THE SAME	7

Success Rate - Comments

- **Marking by levels helps students get better marks, but the students are definitely weaker**
- **The good are still good, the bad are still bad. It's the middle that has slipped.**
- **Fewer drops, less shopping around for courses**
- **In terms of percentage passing, there is not much difference. But, in terms of quality of work and marks, it is somewhat worse.**
- **Due to lack of commitment to assignment completion, middle-to-low end marks are lower.**
- **About the same, but have my standards changed? I think so.**
- **Class averages, mark distributions and failure rates are similar between both cohorts**

How does the maturity level of your current students compare to your past OAC students?

SOMEWHAT WORSE	12
ABOUT THE SAME	2

Maturity Level - Comments

- **Among highly motivated students, little or no difference. Most are noticeable less motivated and less mature. This is most pronounced in MDM4U.**
- **Most students are a year younger.**
- **Many of the "low-end" students still do not know what they want to apply to at university, often act like kids.**
- **Serious attendance problems.**
- **Maturity level among students who went through 11U is better than 11U/C students**
- **They do not have the same work ethic.**

How do your so-called “high-end” students fare compared to your past OAC students?

SOMEWHAT WORSE	3
ABOUT THE SAME	10
SOMEWHAT BETTER	1

High End - Comments

- **The elite MGA students demonstrate slightly better problem solving skills than their OAC counterparts. They are less intimidated by challenging problems and are more willing to try multiple approaches to a difficult problem.**
- **There is not much difference. They are gun hold anyway and excel in every respect**
- **Somewhat worse because we have no more "visa" students**
- **The good students are still excellent**
- **The high-end students have developed better problem solving skills due to more exposure to formal techniques. They are also more willing to discuss solutions with their classmates, with less propensity to compete for marks.**

How well are your current students prepared for university or college compared to your past OAC students?

MUCH WORSE	2
SOMEWHAT WORSE	9
ABOUT THE SAME	3

Prepared for U - Comments

- They do not get the same amount of content as in OAC
- They do not seem to be independent learners
- No trig units in MCB4U, so much worse prepared.
- No trig differentiation, no integration. These areas are assumed by engineering and applied science.
- Lack of skills and maturity
- The students improve drastically over the course of the semester

Prepared for U - Comments

- **Many come back and say they are glad they took stats. But, the use of technology is not done by universities – they must use formulas more**
- **Algebra skills not as good**
- **The highly motivated students are equally motivated regardless of which cohort. Otherwise, the extra year of maturity that the OAC students had generally translated into better work habits, a better attitude and a more serious approach to their post-secondary studies.**

Could you briefly survey your classes and indicate the fraction of your students who are currently in their fifth year or who are intending to return for a fifth year.

4/21 1/5 2/24 4/24 5%

1/10 2/13 20% 5/9 11/21

Please also provide a brief synopsis of their reasons for returning.

- Want to upgrade/improved their marks
- Able to take more courses
- Able to go slower to get higher marks
- Not old enough for post-secondary
- Get a broader education and become more prepared (knowledge and maturity) for university
- Get into better choice of program or university
- Didn't get into university on first try
- Not enough credits yet
- Have not decided on course of study
- Marks too low
- Co-op credits
- Did not have the required coverage to get into university

Additional Comments

- **The lack of algebraic skills is one of the problems**
- **They lack preparation in trigonometry**
- **Too many students are in the U stream and should be in C stream**
- **I think the students are not mature enough to go on to university at this time**
- **The grade 9 program is not at the level it should be. Grades 10 and 11 are better, but still there are a lot of concepts missing and some units not thoroughly done.**

Additional Comments

- **Some of the relevant topics have been cut out or reduced so that year-by-year, scaffolding is non-existent. For example, absolute value equations & inequalities taught in the old grade 12 course are missing but are considered a prerequisite for MBC4U. Students learn trig in grades 10 and 11 but is missing from MCB4U. This makes the transition to university difficult.**

- **Approach is a major factor in success in math. I would like to see more stress on strategy or approach. This has always been difficult but now, due to compressed curriculum, time prevents me from doing the meagre amount I manage to squeeze in compare to in the past**

Additional Comments

- **Accompanying the new curriculum were numerous educational reforms especially in the area of assessment and evaluation. Along with the new curriculum came such reforms as the separation of behaviour from evaluation, lack of firm deadlines on assignments and multiple opportunities to write evaluations.**

Due to pressure from parents and administrators, some teachers are responding by making it easier to pass. This, in turn, is having a direct effect on how teachers deliver the curriculum. It is difficult to teach a demanding curriculum emphasizing problem solving if students are not allowed to do poorly. As fear of failure is being eroded, the attitudes, maturity and behaviour of the below-average, average, and even the above average students are slowly deteriorating.

There has been some debate over the emphasis on graphing calculators in the high school curriculum ….. students are not allowed to use a calculator in first year university…..universities are not using graphing calculators and they see no reason to begin…..it seems that the use of graphing calculators is not seen as proper preparation for either university or college.

Additional Comments

- **A wider array of functions should be studied in grade 11. Exponential, logarithmic and part of polynomial functions could be moved down from MCB4U and conics should be moved to the MGA4U course. This would leave more room to expand the Calculus (including trigonometry) portion of MCB4U.**

Depending on the textbook, school and teacher, problem-solving skills have been taught sporadically. Even if they have been taught problem solving skills, students still have difficulty selecting the appropriate strategies due to their lack of mathematical maturity.

The approach to learning calculus is also a concern, in that a visual (graphing) approach is secondary to "word problems" in many resources, especially considering the visual approach has been used in previous grades, when studying transformations of functions, and so on.

Thank you

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