

**BC Association of Mathematics Teachers**  
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## **Response to the proposed changes of the Graduation program**

The BC Association of Mathematics Teachers has a number of concerns with the proposed changes. We outline these in several sections, one for each major topic. We will first address math related items and then other proposals that will affect the system in general. We welcome any further discussion regarding this response and hope that many of these issues will be addressed before implementing any changes.

### **General Impression**

We question the validity of the stated reasons for change. A couple of surveys that lack longitudinal data should not form the basis for major educational change. We dispute the inference that since only twenty percent of our students go directly to university studies, we should focus our attention more on school to work transitions. The following excerpt from a 2001 report on School-Work Transitions published by Human Resources Development Canada is very relevant to the stated purpose of the Graduation Requirements Review:

“almost all teenagers who actually pursue post-secondary education (especially a university education) planned to do so while in Grade 12...On the other hand, so did the majority (75% in the Sharpe (1996) study) of those who did not pursue any post-secondary education. As a direct consequence of this asymmetry, most teenagers whose main activity following exit from high school is the labour market, did not have this as their plan. This is likely the main reason why in the Sharpe (1996) study, three-quarters of those who did not pursue further education felt their career plans were off track six months after completing high school, compared to only one in twenty of those currently pursuing post-secondary education.”

[citation: Policy Research Issues for Canadian Youth:  
School-Work Transitions  
June 2001

[http://www.hrdc.gc.ca/sp-ps/arb-dgra/publications/research/2001docs/R-01-4-1/e/r-01-4-1\\_E\\_4.shtml](http://www.hrdc.gc.ca/sp-ps/arb-dgra/publications/research/2001docs/R-01-4-1/e/r-01-4-1_E_4.shtml)]

This confirms that the vast majority of senior students across Canada expect to participate in post-secondary education, and those that don't get there feel derailed and dissatisfied. We want ALL of our students to have the post-secondary option available to them and even experienced teachers cannot reliably pre-judge (in grade 10) which of our students will end up exercising this option. As well, there is considerable documentation regarding the concrete benefits that post-secondary education brings to both the people

that acquire it and the economy as a whole. We should be looking for ways to increase post-secondary participation rates not capitulating to current trends.

- **RECOMMENDATION:** That the Ministry recognize that student demand for postsecondary education currently exceeds available places, and collaborate with the Ministry of Advanced Education to increase BC's rate of participation in postsecondary studies.

Our second concern regarding the graduation review is that the timeline for feedback is much too short. The documents we are asked to review describe general changes with vague references to the details, and it is impossible to critique a plan properly without knowing these important details. Furthermore, we believe it is educationally unsound to rush ahead with fundamental changes to our educational system for reasons that appear to be lacking in thought and political in nature.

- **RECOMMENDATION:** That the Ministry revise the timeline and allow for a second draft with further details to be brought forward.

## **Section 1: Math-related proposals**

### **Requirement to offer all 3 Math courses**

Requiring all schools to offer all three pathways completely misses the point. The major obstacle to the development of the applications program in most schools is the fact that post-secondary institutions have not accepted it. Whether twenty percent of our students attend university or not, no one can determine which students will form that minority, especially not at the end of Grade 9, when Math pathways are chosen. For this reason, students try to leave their options open and end up taking the course that is least restrictive. The current proposal will do nothing to effect any change in regards to this dilemma. To turn a blind eye to the real issue is to ensure that this program never fully gets the attention it deserves.

- **RECOMMENDATION:** That the Ministry address the real problem and start a discussion with the post-secondary institutions, teachers, administrators and any other included parties, as to making this program feasible.

We are also concerned that this requirement would result in most schools and districts offering the Applications of Math courses via distance learning. This would be entirely the wrong medium for a course of this nature. As well, we are interested in knowing why Mathematics is the only subject in which schools are *required* to offer multiple courses, and if the Ministry intends to provide the necessary funding for each school in the province to implement the expensive Applications of Math program. However, our first concern must be resolved or this entire issue becomes moot.

### **Comprehensive Exams**

The BCAMT has learned from various Ministry representatives that a comprehensive Math 11 exam would be enacted and that this would be a single exam rather than three

separate exams for the various pathways offered in the Mathematics curriculum. We have also been told on a number of occasions that teachers cannot assess items that are not in the course learning outcomes, so we assume that the material tested on this single proposed exam would appear in the curriculum of each math pathway. The only such topics are basic operations. In other words, the content would have to be accessible for the Essentials of Math 11 students and would, therefore, lower the standards expected of the Principles or Applications of Math 11 student. To devote upwards of 30% of a Principles of Math 11 students' mark to this exam would significantly lower the standard for this course. This might well cause a big jump in test scores, but the higher scores would be a poor substitute for an actual improvement in student achievement, since they would reflect nothing more than a drastic drop in standards. We are also concerned that this might set the stage for high-stakes testing at the Math 10 level (FSA), Math 11 level and the Math 12 level (provincial exams). This is certainly the only subject in which this level of assessment exists.

- **RECOMMENDATION 1:** That the Ministry give three separate exams for the three math pathways.
- **RECOMMENDATION 2:** If the Ministry is intent on setting a basic comprehensive exam for all students then it should not influence a student's Math 11 mark (proposed ~30% of course mark) but rather it should be reported on the student's transcript as a separate item.

### **Optional Grade 12 exams**

There are a number of concerns with this proposal. The first is the premise that this will increase the participation rates in the various courses. This may be true in some courses, but not in the Principles of Math 12 course. Post-secondary institutions will continue to require these exams and students will continue to write them. This is nowhere more apparent than in the Principles of Math 12 course, where students enrolled *are* planning on attending post-secondary studies. Moreover, this option would create an unnecessary disturbance in a course already laden with external pressures. Almost every district has a math emphasis in its accountability contract and it has come to the point where there is more pressure on teachers regarding student performance on exams than on the students themselves. Time pressures and this emphasis on student and teacher performance have made "teaching to the test" a reality. With the Ministry creating a divided situation in Principles of Math 12 classrooms, students will be less able to focus and gain all the necessary attention they require to prepare for this significant exam. Making these exams optional is a step in the wrong direction. Without further details as to how this would play out in the classroom, there are too many concerns to favour this change.

- **RECOMMENDATION:** All Principles and Applications of Math 12 students should write a provincial exam and the exam should continue to carry a substantial written response component.

Cutting the number of subjects in which Provincial Examinations are given decreases the flexibility of the program by limiting the number of categories in which a student can demonstrate competence against a common standard. The details of this proposal are particularly problematic because the eight subjects in which provincial examinations will

continue to be available are dominated by mathematics and science at the expense of languages, arts, and humanities. This has serious implications for the scholarship program and while some contraction of the Provincial Examination program may be acceptable, the proposal goes too far.

- **RECOMMENDATION:** That the Ministry offer a selection of provincial examinations that allows students with different subject preferences an equal opportunity to demonstrate their achievements and abilities.

## **Section 2: General proposals**

Although our disciplinary expertise is in Mathematics, members of the BCAMT are committed to effective education in all aspects. Hence we are qualified and compelled to comment on several proposals not directly related to Mathematics.

### **Removal of the “school leaving certificate”**

This proposal seems to be aimed at those who receive little recognition for attending school. Special Needs students struggle with the educational material and often receive little more than IEP listed on their report cards. School leaving certificates are often a real boost to their self-esteem and while they may not mean much to businesses, they mean a great deal to the students who receive them. Unfortunately, a portfolio from a special needs student and a report card with IEP written all over it probably wouldn't mean much more to a business owner and it would mean a lot less to the student.

- **RECOMMENDATION:** That the Ministry continue to provide the school leaving certificates

### **Adding Grade 10 to the Graduation Program**

It is not certain whether this proposition would actually increase flexibility. At the most it would see a limited increase since the net result of this change would be a single course less than the current program. One concern is the maturity of Grade 9 students to make important decisions on courses impacting graduation.

### **Course changes**

We have no concerns with the proposed changes to the CAPP program, nor are we concerned with the developments in Socials Studies. We are concerned that the changes to the Fine Arts and Applied Skills requirements will certainly affect those programs. Students may find that they have a less liberal education. As well, the proposed changes to Physical Education are certainly troublesome. First, schools are unlikely to have the facilities available to allow this change. Unless the Ministry is planning on providing a major infusion of funds into the education system, this is just not feasible. Second, the idea that requiring two more years of Physical Education will alleviate the health concerns of our province is not credible. This decision seems to be a hasty fix to a broad problem. Lastly, and potentially more important, this definitely limits the choice and flexibility of students. By definition, more requirements imply less flexibility.

### **Locally developed courses**

Our major concern with this proposal is that the standards be set in regards to district-developed courses. It is very hard to analyze whether this is a positive change without first seeing these standards. This would certainly open up options for students, but educationally it may not be appropriate, especially if the standards are not appropriate.

### **Pathways**

Considering the desire to have more flexibility and choice, it doesn't appear to make sense to limit students to 8 pathways. Currently, students can have a tailor made program developed for themselves. There are also serious concerns regarding the belief that students wouldn't limit their choices by choosing one pathway in one year and then another in the next year. Without more details, it is tough to see how this would work. It seems very unrealistic to think that each pathway can lead to employment, trades training, college or university. Clearly, some pathways lead to one or the other more easily.

### **Earned credit**

The main issue surrounding this change is, once again, what standards will be used to determine whether a student has met Physical Education requirements by their extra-curricular activities. Would a student in a walking club receive credit? How about a skateboarding group? Who determines whether they receive credit? Their coach, an untrained educator? Or a teacher? Again, without further details, this is hard to analyze and hence impossible to endorse.

### **Portfolio Assessment, Panel Presentations, and Resource Implications**

Assessing student portfolios will require an enormous infusion of time and energy . . . resources that have been fully deployed elsewhere to cope with the numerous cutbacks and changes to the education system in recent years. Just reading students' submissions will add significantly to the workload of classroom teachers, but students preparing a project of this size and scope require monitoring and guidance throughout its development---not just a grade at the end. The additional staffing resources needed to make this proposal work are beyond the capacity of the system at this time.

- **RECOMMENDATION:** That the portfolio assessment component of the proposal be removed.

More generally, the Ministry cannot seriously expect financially strained school districts to find the resources to implement the changes outlined in the proposal. Some rich districts may be able to comply with such an expectation; most, however, will not. The result will be further inequities in a system whose goal should be a uniform standard of excellence across the province.

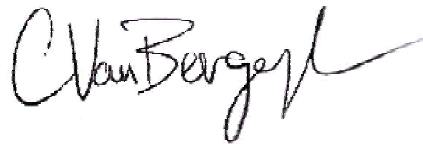
- **RECOMMENDATION:** That additional resources required to implement any proposed changes be supplied to school districts by the Provincial Treasury through the Ministry of Education.

## **Conclusion**

The complete overhaul of BC's Graduation Program is a task of immense complexity and enormous potential impact. It deserves to be carefully thought through and supported with detailed planning and thorough consultation before implementation. The current proposal is deficient in all three areas: its motivation is suspect, details are unavailable to those most affected, and the Ministry's consultation process makes no provision for dialogue beyond the submission of documents like this one. Again we urge the Ministry to rethink its timeline for both consultation and implementation, and to bring forward a detailed implementation plan for further discussion before going ahead with any changes to the current system.

Finally, as recognized by various Ministry documents and statements, our education system is already one of the best in the world. Improvements can and should be made, but fine-tuning is more called for and not drastic sweeping changes.

I thank you for your consideration of this matter and look forward to further discussion regarding this very important topic.

A handwritten signature in black ink, appearing to read "Chris Van Bergeyk". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Chris Van Bergeyk  
President, BCAMT