

## British Columbia's Data Challenge

Social equity, societal replication, and economic growth are all competing aims of a public education system. In British Columbia the stated aim of our education system “is to enable the approximately 553,000 public school students, 81,000 independent school students, and over 2,200 home-schooled children enrolled each school year, to develop their individual potential and to acquire the knowledge, skills and abilities needed to contribute to a healthy society and a prosperous and sustainable economy.”<sup>i</sup> More specifically, the Ministry of Education identifies that “[A] quality education system assists in the development of human potential and improves the well-being of every British Columbian. The B.C. school system is helping develop educated citizens by supporting each student's intellectual, human and social, and career development.”<sup>ii</sup> So, how are we doing with this? Are our students developing into “educated citizens”? How many of them have the “knowledge, skills and abilities needed to contribute to a healthy society and a prosperous and sustainable economy”? How do we know?

The purpose of this paper is not to debate the relative merits of the competing goals and masters, public education serves but, rather, to attempt to ascertain how we make informed decisions once we decide on what those goals are. What would golf be like without the flags? Once we remove our targets and guides, we aimlessly traverse a vast landscape of perils with no sense of direction or ability to assess our development. So, what are those markers, those guides that help us achieve the lofty goals of our public education system? Related to these questions are others about ways to make informed decisions about how to achieve these goals. Who needs what information to inform the decisions they need to make? In order to break these complex questions down we need to address them as two distinct inquiries. The first looks at what measures we have of our overall, systemic, goals

and what is missing. The second inquiry looks at what measure we have for the decisions made before students leave our schools in order to fulfill the Ministry's contract with its taxpayers.

### **Macro Measures**

In order to assess the level to which our public education system is producing members of society that “contribute to a healthy society and a prosperous and sustainable economy” one could look at many measures. The easiest and most measured are the economic measures such as GDP (Gross Domestic Product), inflation, and employment rates. The more complex measures would be those illuminating contributions to a healthy society. For these measures, one might use crime statistics, health care measures, and usage of social services. One of the challenges to such measures is the lagging nature of the results. For example, these measures today are assessing our education system from 10 – 20 years ago as it is those students who are now the subjects of the afore mentioned measures. Granted, we can refine some of these measures by shortening the purview. For example, we can look at employment rates and levels of those people ages 18 – 24 to get some sense of work readiness current graduates can expect. We currently have data for post-secondary and career preparation, as well as transitioning to post-secondary programs,<sup>iii</sup> but these leave largely unanswered questions about how our students contribute to “a healthy society.” Many of the larger, more reflective measures require greater lag time. Another challenge is identifying causality to these measures. Can we connect reduced GDP to some deficiency in our public education system? What decisions are made with this information and by whom? How timely does this information need to be, are general themes sufficient?

While those large-scale measures can provide validation for the work our public schools are doing, and can be useful in articulating what we value as a society, are they useful for shaping and directing policy in general. Policy makers should have clear goals and rationales for the policies they are

creating. In British Columbia, the public education system underwent a significant redesign of their curriculum in an attempt to better meet the demands of a dynamic, global economy. These changes were well researched and informed by best practices taken from around the world.<sup>iv</sup> However, seemingly missing are ways to measure the success of this transformation. Will there be measures of relative success of students transitioning from school to the work force? How do we define this success? Will there be measures of burden on our social system? Will there be measures of life satisfaction? If the answer to these questions is affirmative, do we have base line data and where can that information be found? Who is tracking these macro measures of systemic success? It seems to me that measures of productivity, strain on social services, and life satisfaction surveys 5, 10, and 15 years after graduation would be useful and attainable.

### **Micro Measures**

Various people in public education make many decisions every day. In order to make these decisions, one would hope those making the decisions have the information necessary to make them. Top quality education systems routinely resource and support the most vulnerable.<sup>v</sup> To begin, we need to identify who needs what supports as they enter our school systems. BC currently uses EDI (Early Development Instrument) data<sup>vi</sup> to help inform those decisions. Using this data of child vulnerability, districts and schools can allocate extra resources to the most vulnerable.

The next measures that are provincially available are at the grades four and seven level. These provincial assessments are designed to provide information about cognitive and non-cognitive student development; however, they fail to do so. The Foundation Skills Assessment<sup>vii</sup> is administered in the fall and assesses student development in reading, writing, and numeracy. The assessments are well designed, but due to political pressures are not consistently administered and have variable participation rates challenging the validity of the results. Those educators that use them as a formative

tool, find value in the assessments; however, to use the results beyond that becomes particularly challenging and prone to misuse and misinformation. The other provincial assessment tools at these grade levels, as well as at grades 10 and 12, are the Provincial Student Learning Surveys<sup>viii</sup>, which are designed to provide feedback to the government about student and parent satisfaction with their school experience. There are two main challenges with these tools. The first is the length of the survey, sometimes in excess of 100 questions. This leads to fatigue, confusion, and disinterest in those completing the student survey. The second challenge comes from the inconsistency of care and attention by those completing the survey. Very few parents take the survey, rendering the sample group invalid; while students taking the survey have little incentive for completing the survey accurately, so often give it superficial attention. Though these tools could provide valuable data, the application of them greatly diminishes their value as measures of cognitive or non-cognitive skills.

In the later grades there are more valuable sources of data available. Provincially administered government exams in the final three years of public schooling provide data on student cognitive skills in numeracy and literacy. This data can be used to assess summative effectiveness of our system's development of cognitive skills in our youth. The data could be used in a predictive manner for preparation for life as adults; however, the BC educational reforms have been predicated on preparing our youth for a dynamic future, one that demands more than cognitive skills. We need "to provide an education that will make it possible for everyone to have a reasonable chance at the jobs available for knowledge workers: jobs that require very high skill levels, the ability to solve complex problems of a sort no one has seen before, to be creative, to synthesize material from a wide variety of sources and see the patterns in the information that others cannot see, to work with others in productive ways, to take a leadership role when necessary, to be a good team member when needed, and to do all of this with a high ethical standard."<sup>ix</sup> These assessment tools will not provide us with the data to measure these outcomes. British Columbia's redesigned curriculum has put non-cognitive skills at the forefront;

however, there are currently no mechanisms to measure the development of these skills identified as necessary in achieving personal success and Ministry goals.

Other data that is collected and that helps inform some specific decisions address school completion rates. We keep data on timely transitions between grade levels, on length of time to reach graduation, and the number of students who graduate. These are easy to measure but have limited utility or value. We also have access to demographic data. All of these pieces of data do assist those who need to make decisions effecting targeted groups and can serve as harbingers of situations requiring attention; however, they are of superficial value. They are easy to measure, but provide little useful insight. For example, rather than grade transition rates (the number of students advancing to the next grade level), of more value would be information about how well students transition between schools and levels. How do we know if we are helping students to be successful if we are not able to track their success after participating in our schools? For example, it is very difficult for elementary schools to get results for their students 1 and 3 years after they have left their schools to see if they have been effectively prepared for the next level. I have been trying, in vain, to find out how the students from our middle school do when they join others at the secondary school. The new provincial data management system, My Education British Columbia, does not support the tracking of students between schools in this manner and those who can change this have no desire to do so: this is a emblematic deficiency. Who decides what data is worth collecting and which data is not?

### **Call to Action**

Some school districts are attempting to use data to inform the public and their own decision makers,<sup>x</sup> but most are not, and the data being used is window dressing at best. The push for better quality data needs to start at this level, as school districts individually and collectively are the ones responsible for decision-making. The next step is to identify who will be making what decisions and

what information they require to inform those decisions. The different silos (Ministry, school districts, teachers, researchers, parents, and students) need to work together to design methods for attaining the requisite data: a cautionary note needs to be made here: a baby grows no faster the more we weigh it. We do not need more data and more measurement; we need targeted and useful data to inform decisions put in the hands of those making the decisions. Be clear about what our goals and priorities are and design measures for those goals and priorities. For example, if we are going to produce positive contributors to our society, identify what the characteristics are of such people and what measures will indicate the existence of those characteristics. Some of these tools and structures are already in place, but they need to be utilized effectively. The purpose of this initiative is to achieve measurement for improvement and measurement for accountability.<sup>xi</sup> The public education system needs to be accountable to its taxpayers and to each other. We need to know if we are delivering on our promises. We also need to be able to target areas for improvement and, ideally, help identify means to achieve that improvement. Mindful, targeted data collection and analysis can achieve this.

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<sup>i</sup> British Columbia Ministry of Education web-site:

<https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/education>

<sup>ii</sup> British Columbia Ministry of Education web-site for measuring student success:

<https://studentsuccess.gov.bc.ca/#about-this-website>

<sup>iii</sup> <https://studentsuccess.gov.bc.ca/>

<sup>iv</sup> Relevant references for BC's redesigned curriculum:

<https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/references.pdf>

<sup>v</sup> Tucker, M. S. 2015. *Surpassing Shanghai: An Agenda for American Education Built on the World's Leading Systems*. Cambridge, Massachusetts: Harvard Education Press.

<sup>vi</sup> Early Development Instrument information: <http://earlylearning.ubc.ca/edi/>

<sup>vii</sup> Foundation Skills Assessment information: <https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/program-management/assessment/foundation-skills-assessment>

<sup>viii</sup> Student Learning Survey information: <https://www2.gov.bc.ca/gov/content/education-training/k-12/support/student-learning-survey?keyword=Satisfaction&keyword=surveys>

<sup>ix</sup> Tucker, M. S. 2015. *Surpassing Shanghai: An Agenda for American Education Built on the World's Leading Systems*. Cambridge, Massachusetts: Harvard Education Press. Page 6.

<sup>x</sup> The Surrey School District is one example of this: <https://surreylearningbydesign.ca/district-planning/our-learning-story/our-data-story/>

<sup>xi</sup> Bryk A.S., Gomez, L.M., Grunow, A., LeMahieu, P. G. 2016. *Learning to Improve: How America's Schools Can Get Better at Getting Better*. Cambridge, Massachusetts: Harvard Education Press.