



# A Parents' Guide to Common Sense Education in Alberta

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## About the author

**Michael Zwaagstra** is a public high school teacher, education researcher and author. He has extensive teaching experience at a variety of grade levels and currently teaches high school social studies in Manitoba. He received his Bachelor of Education, Post-Baccalaureate Certificate in Education and Master of Education degrees from the University of Manitoba where he won numerous academic awards including the A.W. Hogg Undergraduate Scholarship, the Klieforth Prize in American History and the Schoolmasters' Wives Association Scholarship. As an educator, Zwaagstra is a strong proponent of raising academic standards, holding schools accountable for their results and expanding the educational options available to parents. He conducts policy research on education issues for the Frontier Centre for Public Policy and the Atlantic Institute for Market Studies. His research has addressed topics such as standardized testing, teaching methodologies, assessment, school choice and teachers' unions. His columns promoting common-sense education reforms have been published in major daily newspapers including the *National Post*, *The Globe and Mail*, *The Province*, the *Calgary Herald*, the *Winnipeg Free Press* and *The Chronicle Herald*. At the 2013 Canadian Community Newspaper Awards, Zwaagstra received second place in the Outstanding Columnist category. He is a frequent guest on radio and television stations across the country. His first book, *What's Wrong with Our Schools and How We Can Fix Them* (co-authored with Rodney A. Clifton and John C. Long), was published in 2010. *What's Wrong with Our Schools* ignited debate on education reform across the country in school staff rooms, newspapers and university campuses. Zwaagstra also has experience as an elected official. In 2006, he was elected to the Steinbach City Council. He was re-elected in 2010 and appointed to the position of Deputy Mayor in 2012. His community involvement includes serving on several boards, writing a weekly column for his local paper and teaching adult classes in his church.



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# Introduction

All parents want their children to receive a great education. This desire is understandable because a solid education significantly improves a young person's chances of success in life. In particular, literacy and numeracy have been and still are the foundational skills that will never become obsolete. No one should ever graduate from high school without mastering these basic skills.

There are more than 650,000 K-12 students in Alberta. Most attend public schools or fully funded separate (Roman Catholic) schools, while relatively few, approximately 5 per cent, are enrolled in private schools.<sup>1</sup> This means that the vast majority of parents rely on the public education systems, non-denominational and Catholic, to provide their children with the skills and knowledge they will need in the future. Often, things go well and parents are satisfied. Unfortunately, this does not always happen.

Although Alberta's education system is recognized as one of the best, if not the best, in Canada, its quality should never be taken for granted. In fact, recent test results from the Organisation for Economic Co-operation and Development's Programme for International Student Assessment show that student achievement in Alberta has declined significantly over the last decade—particularly in mathematics.<sup>2</sup>

Many Alberta parents are now beginning to worry that schools are using their children as guinea pigs for unproven and ineffective educational strategies. They wonder why their children no longer have spelling tests, learn basic grammar or memorize the times tables. Often, their concerns are dismissed with the claim that "research proves" the effectiveness of a new strategy or initiative, no matter how bizarre it sounds to parents.

To top it off, when parents get their children's report cards, they find that traditional percentage grades have been replaced with confusing descriptions such as "evident", "emerging", or "needs support." Decoding these words is no easy task, and it makes it that much harder for parents to know how well their children are doing at school. Unfortunately, the concerns of parents are often ignored, and school administrators continue to blindly follow the recommendations of the latest educational gurus.

So what are parents supposed to do? Where can parents go to get information to push back against some of these foolish fads? All too often, parents are on their own when fighting an entrenched ideology supported by a well-established bureaucracy. Sometimes, parents make successful arguments, as recently happened when the Alberta government agreed to implement some of the math curriculum changes requested by Dr. Nhung Tran-Davies and nearly 17,000 people who signed her petition to the Department of Education. Unfortunately, such victories are rare.<sup>3</sup>

More often, school administrators and teachers know that they only need to wait out the concerned parents who will eventually give up in frustration at the stream

of edu-babble thrown their way. Some of these parents will ultimately decide to home-school their children or send them to private schools.

This handbook fills a void by providing parents with answers to some of the common arguments made by proponents of the latest education fads. It translates some of the most commonly used jargon into common English and shows why parents should not be intimidated by the stock phrase “research shows” when school officials spurt it out at them. In fact, parents and other readers may be surprised at just how compelling the research evidence is for the more traditional teaching techniques. It will make them wonder how these unsupported fads keep returning.

Let us begin by looking at the philosophy that underlies some recent education fads.

**“*...school administrators and teachers know that they only need to wait out the concerned parents who will eventually give up in frustration at the stream of edu-babble thrown their way.*”**

# What are the fads and where do they come from?

With great fanfare, the Alberta government released the “Inspiring Education” report in April 2010. The report proclaimed that the government should transform education in Alberta.<sup>4</sup> It also claimed that teachers should focus less on academic content and more on the process of learning.

In a system that is more learner-centred and competency-based, Albertans see the role of the teacher changing from that of a knowledge authority to an architect of learning—one who plans, designs and oversees learning activities....

As we focus more on competencies, *there will be less emphasis on knowing something*, [emphasis added] and more emphasis on knowing how to access information about it.<sup>5</sup>

Alberta’s “Inspiring Education” report is part of a much broader movement called 21st Century Learning. Advocates of this approach say that the rapid increase in the amount of information and its easy accessibility via the Internet make it impractical for students to focus on the acquisition of knowledge. In other words, it is more important to teach students how to learn rather than to focus on specific content. At first glance, this sounds reasonable.

This is why 21st Century Learning recommends reducing the amount of content in the curriculum, increasing the amount of “personalized” instruction and making technology available in classrooms.<sup>6</sup> John Kershaw, president of C21 Canada, recently noted that Alberta was “leading the country on the 21st Century Learning movement.”<sup>7</sup>

Clearly, the Alberta government has invested heavily in the 21st Century Learning movement. Advocates of this movement make it sound as if their ideas are new and will be revolutionary in changing education for the better. But are they? Consider this quote from a prominent educational leader.

The older teacher thought first of his subject matter, that it get learned.... The good teacher of the newer view well understands how it is the process itself, especially as socially conditioned, that educates; and he makes every effort to get and keep the process going on such terms as will cause it to gain in ever more certain and intelligently-directed momentum. This is his chief aim. That attained, the rest follows.<sup>8</sup>

The author of this statement is William Heard Kilpatrick, a former education professor at Columbia Teachers College in New York, and he wrote it in 1936. Kilpatrick was one of the most prominent education professors in the 20th century, and his ideas eventually came to dominate faculties of education across North America.<sup>9</sup> Kilpatrick’s writings make it clear that there is nothing new in the 21st Century Learning proposal.

The same can be said for the suggestion by 21st Century Learning advocates that schools should decrease the separation between subject areas (i.e., math, science, social studies) by integrating them through project-based learning opportunities.<sup>10</sup> Once again, Kilpatrick beat them to it by more than 75 years.

For teaching purposes, this older outlook customarily organized these items logically into subjects and assigned for the daily lesson some convenient subdivision of such a subject...

In this discussion, this atomistic view of objectives, with its logical order of learning by separated subjects in long-range advance of actual use, is totally and wholly rejected as thoroughly misleading and mischievous, being in fact the antithetical opposite of the best available conceptions both of the life process and of learning. In contrast with such an atomistic and static conception of objectives the aim here is to set forth dynamic objectives inherently related to life as a process and therefore to natural and useful learning.<sup>11</sup>

A consistent theme of the 21st Century Learning movement, in general, and Alberta's "Inspiring Education" initiative, in particular, is that the world is changing faster than ever and education needs to change along with it. In fact, a video produced by Alberta Education to introduce "Inspiring Education" proudly proclaims, "We're changing the way we think because the world is changing."<sup>12</sup> In it, the narrator declares that traditional teaching methods are no longer sufficient because we cannot predict what skills will be needed 10 years or more from now.

Interestingly, the obsession with the rapid change in society can be traced back to Kilpatrick. In one of the chapters in his 1925 book, *Foundations of Method*, Kilpatrick asks: "Am I wrong in thinking that education is changing now more rapidly than ever before?"<sup>13</sup> Throughout the chapter, Kilpatrick says that the rapid acquisition of knowledge made the old ways of teaching obsolete. Like modern 21st Century Learning advocates, he even talks about how the world has become more interconnected than ever before. "Life is vastly more complex in detail, and we are far more tied up with others about us even to our most distant neighbors."<sup>14</sup>

Like the "Inspiring Education" video, Kilpatrick notes that we cannot know what scientific discoveries will soon be made or what inventions will be created. Thus, in order to help students adjust to a "rapidly shifting and changing world, changing in unexpected ways and in unexpected directions," schools should "stress thinking and methods of attack and principles of action..."<sup>15</sup> In many ways, the 21st Century Learning movement is simply a repackaged version of the very old 20th century ideas of William Heard Kilpatrick.

However, even this would not be entirely accurate because the core idea Kilpatrick espoused can be traced to 1762 when French philosopher Jean-Jacques Rousseau published *Emile*. In it, Rousseau espoused a "child-centered" philosophy that let students learn at their own pace. He opposed "rote learning" and argued against teaching facts and concepts to students.<sup>16</sup> Thus, many of the 21st Century Learning ideas can be traced back to the 18th century.

The philosophy of education that underlies the thoughts of Rousseau, Kilpatrick, 21st Century Learning and “Inspiring Education” goes by a variety of names but is best known as constructivism. Constructivism argues that students should construct their own understanding of the world around them. Constructivists reject the idea that there is a defined body of knowledge and identifiable skills that teachers should impart to students.

For example, constructivist math teachers think they need to help students develop their own ways of solving math problems and that they should not teach standard algorithms for addition, subtraction, multiplication and division. This is why widely used math textbooks in Alberta, such as *Math Makes Sense* and *Math Focus*, are so difficult for parents to understand. Instead of showing students the most efficient ways of solving math problems, these textbooks encourage students to solve questions on their own and write about how they did it.

Perhaps Alberta’s most prominent advocate of constructivism is the Deputy Minister of Education, Greg Bass. Prior to his appointment in 2013, Bass served for more than six years as the superintendent of Rocky View Schools, east of Calgary.<sup>17</sup> During his time as superintendent, Bass shifted this school division in a very constructivist direction and was quite open about doing so. In a 2012 blog post, Bass outlined his philosophy of learning.

A constructivist classroom is one where the teacher acts as facilitator, coach, and assessor of understanding, while letting go of the direct instructional processes characteristic of the cognitivist era. With the democratization of knowledge, a teacher’s role must obviously shift away from knowledge dissemination [sic] toward creating classrooms that foster creativity, innovation, collaboration, and the adaptability of epistemology (what we know and how we know it).<sup>18</sup>

Bass also noted that Rocky View Schools is “in direct alignment with the *Inspiring Education* vision of Alberta Education.”<sup>19</sup> However, there are signs that not everyone in Rocky View was happy with the path Bass led the students down. A survey commissioned by the Alberta Teachers’ Association found significant dissatisfaction among teachers with the leadership provided by district administrators. Most notably, the survey found that “[b]etween 2011 and 2013, teachers’ job satisfaction, feelings of being included in decision-making, and sense of balance in their personal and professional lives [had] all decreased significantly.”<sup>20</sup> Furthermore, a number of parents had also publicly voiced concerns about Rocky View’s obsession with constructivism and 21st Century Learning.<sup>21</sup>

However, the most important question is what works best for students. If constructivist methodologies actually improve student achievement, then they should be taken seriously, but if they do not work, then they should be rejected. The next section examines this question by comparing constructivism with more-traditional approaches. Since constructivist philosophy is at the heart of Alberta’s “Inspiring Education” initiative, it is important to carefully evaluate the evidence for this approach.



# What really works in Alberta's classrooms

In the 1960s, the U.S. government funded one of the largest educational research studies ever conducted, Project Follow Through, which involved more than 72,000 students in more than 180 schools over a 10-year period. The goal was to find the most effective education innovations that could help break the cycle of poverty for a great number of disadvantaged students.<sup>22</sup>

This mammoth study evaluated five major instructional techniques: direct instruction, whole language, developmentally appropriate practices, discovery learning and the open education model. The first of these, direct instruction, was the only traditional teacher-directed technique included.<sup>23</sup> Teachers who use direct instruction identify learning goals, make them clear to students, show students what they need to do, check their understanding and provide time for students to practice independently.<sup>24</sup> In contrast, the other instructional techniques are all varieties of the constructivist approach, which emphasizes student self-discovery.

Researchers found that students in the direct instruction group significantly and consistently outperformed students in the constructivist groups. Not only were their basic math and reading skills superior, but the students in the direct instruction group had more-advanced skills in reading comprehension and math problem solving than did the students in the other groups. In addition, direct instruction students had more positive self-esteem, which the researchers attributed to their academic competence.<sup>25</sup> When students from these groups were tracked for 10 years, the direct instruction students continued to outperform the other students in math, reading and writing. In fact, these students were more than twice as likely to complete high school as the students in the constructivist groups were.<sup>26</sup>

Other educational researchers have replicated these findings. Research conducted by Jeanne Chall is a prime example. Chall was a professor of education at Harvard University for many years. She also founded and directed the Harvard Reading Laboratory. Her final book, *The Academic Achievement Challenge: What Really Works in the Classroom?* synthesizes all the major research studies comparing the effectiveness of traditional, teacher-directed techniques with student-centred, or constructivist, techniques.<sup>27</sup> She does not mince words in her conclusion:

Traditional, teacher-centered schools, according to research and practice, are more effective than progressive, student-centered schools for the academic achievement of most children. And that approach is especially beneficial for students who come to school less well-prepared for academic learning—children of less educated families, inner-city children, and those with learning difficulties at all social levels.<sup>28</sup>

Other researchers have also compared these teaching techniques. John Hattie is the director of the Melbourne Education Research Institute at the University of

Melbourne, Australia. In his book *Visible Learning: A Synthesis of Over 800 Meta-analyses Relating to Achievement*, Hattie summarizes the results of thousands of research studies on the relationship between the way teachers teach and student achievement. In the introduction to his book, he says:

The role of the constructivist teacher is claimed to be more of facilitation to provide opportunities for individual students to acquire knowledge and construct meaning through their own activities, and through discussion, reflection and the sharing of ideas with other learners with minimal corrective intervention. These kinds of statements are almost directly opposite to the successful recipe for teaching and learning as will be developed in the following chapters.<sup>29</sup>

The rest of *Visible Learning* bears out this statement. Notably, Hattie found that traditional teacher-centred methodologies, such as direct instruction, are much more effective than constructivist methodologies.<sup>30</sup>

In 2006, *Educational Psychologist*, a highly rated journal produced by the American Psychological Association, published a peer-reviewed article by Drs. Paul Kirschner, John Sweller and Richard Clark. In it, Kirschner, Sweller and Clark compared the effectiveness of traditional, teacher-centred teaching methodologies with minimally guided constructivist teaching techniques.<sup>31</sup> Their conclusion is unmistakably supportive of traditional teaching:

In so far as there is any evidence from controlled studies, it almost uniformly supports direct, strong, instructional guidance rather than constructivist-based minimal guidance during the instruction of novice to intermediate learners. Even for students with considerable prior knowledge, strong guidance while learning is most often found to be equally effective as unguided approaches. Not only is unguided instruction normally less effective; there is also evidence that it may have negative results when students acquire misconceptions or incomplete or disorganized knowledge.<sup>32</sup>

Another person who critically examined the issue of teaching is Mike Schmoker, a former school administrator and a well-known speaker and writer. In his book *Focus: Elevating the Essentials to Radically Improve Student Learning*, he outlines three simple things that schools need to do to improve their students' academic achievement: have a coherent, focused curriculum; ensure that teachers teach high-quality lessons; and include purposeful reading and meaningful writing in every course.<sup>33</sup> In other words, students should actually read substantive books and articles and write formal essays.

According to Schmoker, present-day curriculum guides contain too much verbiage and too few clearly defined goals and standards for the students to reach. He suggests rewriting these guides to focus on the specific content that students need to master at every grade level. For example, instead of meaningless verbiage such as "...comprehend and respond personally and critically to oral, print and other media texts,"<sup>34</sup> English Language Arts curriculum guides should prescribe specific books to read and the number and length of essays for students to write.

This vastly shortened curriculum would be far more meaningful to students and teachers.

To deliver sound lessons, teachers should use direct instruction techniques of proven effectiveness. As for purposeful reading and writing, this is done by requiring students to read quality literature and to write formal essays. Obviously, Schmoker’s three recommendations fly in the face of constructivist ideology, which discourages any form of direct instruction. Schmoker’s recommendations are, however, supported by considerable research evidence.

Now let us take a closer look at two major subject areas—math and reading—that are the building blocks of all the other subjects taught in school.

**“According to Schmoker, present-day curriculum guides contain too much verbiage and too few clearly defined goals and standards for the students to reach.”**

# Math instruction that makes sense

In 2008, Alberta Education formally adopted the Western and Northern Canadian Protocol (WNCP), which was heavily influenced by constructivist ideology, as its official math curriculum. In this protocol, students do not need to memorize times tables or learn the standard algorithms for addition, subtraction, multiplication and division.<sup>35</sup>

This change in direction did not meet the approval of many parents, especially when their children began coming home with math assignments that did not make sense to them. Schools across the province adopted textbooks such as *Math Makes Sense* and *Math Focus*, which supported the new constructivist direction.<sup>36</sup> Not surprisingly, these textbooks rely heavily on the discovery approach and do not contain the step-by-step instructions that most parents want to see for solving math questions.

Dr. Nhung Tran-Davies, a parent and a family physician in Calmar, became frustrated when discovery math was forced on her Grade 3 daughter, Kenya. She decided to talk with the teachers and principal. After getting nowhere, she took stronger action and organized a petition calling on the Alberta government to restore the fundamentals to the math curriculum.<sup>37</sup> Her petition garnered nearly 17,000 signatures, many of them from other parents who were frustrated with the way math was being taught. Eventually, this lobbying led the Alberta Minister of Education, Jeff Johnson, to revise the curriculum and put more emphasis on basic math from kindergarten to Grade 12.<sup>38</sup>

However, this small gain by Dr. Tran-Davies and other parents did not prevent the discovery math proponents from fiercely defending the WNCP curriculum. In fact, one of the strongest proponents of discovery math, University of Alberta math education professor Elaine Simmt, dismissed the concerns of parents who called for a return to basics in math classrooms in the following way:

We can call for back to basics and memory work, but is that honouring what children bring to the classroom? Is it the kind of environment we want our children to be working in, or do we want them working in an environment that respects who they are and takes advantage of what they know?<sup>39</sup>

Like many discovery math proponents, Simmt paints a false picture of traditional math instruction. No one suggests students should do nothing but memorize times tables or work on endless pages of math worksheets. However, there is a place for memorization and even the much-maligned practice of rote learning. Pitting basic skills and conceptual understanding against each other is a bogus dichotomy.<sup>40</sup>

In fact, considerable research shows that a certain amount of deliberate practice is essential to develop expertise in a particular skill.<sup>41</sup> Parents who have sent their children to music or art lessons or any sports programs know this is true. Children need to memorize the musical scales to play an instrument, and they

need to memorize the rules of the game in order to play on a team.

A new study by education researchers Paul Morgan, George Farkas and Steve Maczuga contrasted the effectiveness of teacher-directed versus student-centred techniques in helping more than 13,000 Grade 1 students acquire basic math skills. In short, they found that students with teachers who used more-traditional techniques (i.e., rote learning, memorization, worksheets) significantly outperformed students from classrooms that were more student centred. This was particularly true for students who struggled with mathematics.<sup>42</sup>

According to John Hattie and cognitive psychologist Gregory Yates, there is a simple reason why this is the case. When it comes to learning math, rote learning makes deeper understanding possible.

There was a period in which teachers were encouraged to believe that rote learning stood in antagonism to deeper understanding. This notion is misleading since all indices of knowledge display positive associations. There is no meaningful cleft between “mere surface knowledge” and “deep understanding”. On the other hand, the notion of automaticity implies that when basic skills are automated, mental space becomes available for deeper levels of thinking and understanding through acquiring knowledge. Knowledge literally provides the mind with room to move, to develop, and to change. Repetition and consolidation are vehicles enabling knowledge to be stored within retrievable units, thereby accelerating mental growth through conceptual mastery and deeper understanding.<sup>43</sup>

In other words, it is important to require students to memorize the times tables, solve a series of math problems of progressive difficulty and learn how to do long division. Mastering basic skills makes a deeper understanding of the subject possible. In contrast, the student who struggles to figure out  $6 \times 4$  will quickly become lost in solving an algebra problem such as  $(6x + 5)(4x) = 20$ . Knowing basic math facts by memory is particularly important in algebra since multiple steps are normally involved in problem solving.<sup>44</sup>

Fortunately, there are resources available to help parents who are frustrated with the teaching of math and who want to help their children learn the basics. JUMP Math is an instructional program developed by Canadian mathematician and teacher John Mighton. The curriculum emphasizes fundamental skills while also helping students develop problem-solving abilities, so they can do the basic multiplication and algebra problems noted above. In fact, the positive results of this program in Canadian classrooms have attracted international attention.<sup>45</sup> Parents can visit Mighton’s Website ([jumpmath.org](http://jumpmath.org)) to learn more about the program. They can then help their children learn the basic facts that they will need in later grades.

In addition, Alberta parents would also benefit from reading the material on the Website of the Western Initiative for Strengthening Education in Math (WISE Math) at [wisemath.org](http://wisemath.org). Founded by Drs. Anna Stokke and Robert Craigen, math professors at the University of Winnipeg and the University of Manitoba,

respectively. WISE Math contains important news items, links to research reports and petitions for parents to sign. It is a valuable information source for those who want to know more about the math curriculum and who want to help their children learn math better.

“***The [JUMP Math] curriculum emphasizes fundamental skills while also helping students develop problem-solving abilities, so they can do the basic multiplication and algebra problems noted...***”

# Learning how to read

The debate about reading instruction and literacy in general is also between the two clearly defined sides described earlier—constructivist and traditional. In reading, there are two related issues. One is the phonics versus whole language debate, and the other is over the appropriate amount of prescribed content that should be taught. The first debate concerns the best way to decode words, while the second is how best to improve children’s reading comprehension.

## Phonics versus whole language

Phonics is a teaching strategy where teachers help students learn letter-sound relationships. That is, in English, letters, singularly and in groups (called phonemes), are pronounced in specific ways. Teachers who use phonics teach students ways of sounding out words based on the letters and groups of letters. As students become familiar with the alphabet and the groups of letters, the teacher teaches them the sounds the letters make when they are used together in words. Soon, students will be able to sound out words because they have memorized the sounds of the various phonemes used in the language. Not surprisingly, phonics instruction is favoured by traditional educators, who believe that education should be “structured, sequential, and teacher-centred.”<sup>46</sup>

Constructivists, on the other hand, prefer the whole language approach, which rejects the need to teach students letter-sound relationships. Instead, teachers who use this approach think that students learn to read by reading without the bother of learning phonemes. This approach rests on the analogy that because “babies acquire one or more languages through actually using them, and not by practicing the separate parts, students can learn to read in the same way, by being immersed in rich language.”<sup>47</sup> Students learn how to read when they are exposed to literature that is relevant to their lives.

Earlier, we examined the work of Jeanne Chall, a U.S. education professor who did extensive research on teaching and learning. Fifty years ago, Chall examined the research on reading instruction and student learning. She found that the evidence overwhelmingly supported phonics over whole language instruction.<sup>48</sup> Likewise, John Hattie’s more recent summary of the research literature reached the same conclusion. When it comes to helping students learn to read, it is clear that phonics is important.

In summary, whole language programs have negligible effects on learning to read—be it on word recognition or on comprehension. Such methods may be of value to later reading, but certainly not for the processes of learning to read; it appears that strategies of reading need to be deliberately taught, especially to students struggling to read.<sup>49</sup>

Fortunately, whole language in its pure form has largely fallen out of favour in Alberta schools. Most teachers use balanced literacy, a hybrid that blends whole language and phonics. While balanced literacy is inferior to a structured, systematic phonics approach to reading, it is better than the pure whole language approach.

## Prescribed curriculum content

Understanding the individual words that appear on a page is only half of the reading equation. One also needs a reasonable amount of background knowledge about the topic under discussion. To illustrate, see if you can understand the following sentence.

The specific teaching of the Old Testament as to predestination naturally revolves around the two foci of that idea which may be designated general and special, or, more properly, cosmical and soteriological predestination; or, in other words, around the doctrines of the Divine Decree and the Divine Election.<sup>50</sup>

Unless you are familiar with a specific brand of Christian theology known as Calvinism, you are probably scratching your head after reading that sentence. While you may have been able to decode each word in the sentence, you are not going to understand what Benjamin Warfield meant unless you possess some background knowledge about his theological perspective. In other words, the only way to understand Warfield's writings is to learn more about Calvinist theology in general.

The same principle of understanding also applies to students. Students are more likely to understand a text if they are already familiar, to some degree, with the topic. This is why students who are interested in certain sports can often read articles that are well above their "official" reading level while they struggle with topics in which they know little. Simply put, background knowledge is the key to reading comprehension.

Well-known author and former English professor, E.D. Hirsch, Jr., has argued that in order to be effective readers, students need cultural literacy, also known as core knowledge. He says that students need to develop a large vocabulary by an early age in order to be successful readers. Those who fail to acquire this vocabulary end up falling further and further behind in reading. Since reading is a prerequisite for learning most other subjects in school, these students often fall behind in other areas as well.

Those who know more words will learn still more by virtue of that fact, while those who know few words will gain new ones at a slower rate. As we've seen, experts say that we need to know about 90 to 95 percent of a text's words to understand it.<sup>51</sup>



This means that a content-rich curriculum is vitally important for developing solid readers in schools. Unfortunately, Alberta’s “Inspiring Education” places little emphasis on content or knowledge in general.<sup>52</sup> If schools in Alberta continue in this direction, students will likely be affected in negative ways. Essentially, students will not learn how to read at the same level that their parents learned at the same age.

If parents are experiencing these issues, they can visit the Web site of Hirsch’s Core Knowledge Foundation ([coreknowledge.org](http://coreknowledge.org)). They will find examples of what a content-rich reading curriculum looks like. Hundreds of schools in the United States as well as a few in Canada have adopted the Core Knowledge curriculum, and comparative studies suggest that Core Knowledge students learn more than students in regular classrooms do. As a case in point, one recent study of 10 Core Knowledge schools in New York City showed that their students performed significantly better on reading tests than did students in schools using the balanced literacy program.<sup>53</sup>

In short, teaching systematic phonics and using a content-rich reading curriculum are the requirements for creating top-notch readers.

# Debunking education myths

When it comes to new education initiatives such as those being implemented in Alberta, there are many competing claims. Some are based on solid evidence, and others are little more than fanciful myths. In order to help parents and taxpayers sort the solid claims from the mythical claims, some of the most common education myths are discussed below.

## 1) Students have multiple intelligences

About 30 years ago, Harvard education professor Howard Gardner proposed that people have multiple intelligences. Gardner's theory rejects the widely held position among psychometricians that while people have strengths and weaknesses in a variety of areas, overall intelligence is strongly influenced by a general intelligence factor (called g).<sup>54</sup> Instead, Gardner proposed that humans have eight distinct intelligences (bodily-kinesthetic, intrapersonal, interpersonal, linguistic, logical-mathematical, musical, naturalistic and spatial) that are independent of each other and are not held together by a general intelligence factor.<sup>55</sup>

Gardner's speculative theory is almost accepted as gospel within the educational community. Education consultants have written books and articles filled with suggestions for using multiple intelligences theory with students. For example, to help students master grammar, Thomas Armstrong recommends getting students to form punctuation marks with their bodies (bodily-kinesthetic intelligence), giving each punctuation mark a distinctive sound (musical intelligence) and assigning animals to each punctuation mark (naturalist intelligence).<sup>56</sup> Presumably, this way of teaching will build on the strengths of students with a variety of intelligences, and all students will have better opportunities to learn the subject matter.

The problem with Gardner's theory, however, is that there is virtually no empirical evidence to support it. All the empirical evidence bolsters the theory that while there are different areas of intelligence, they are held together by one overriding component, the g factor. For example, three Canadian psychologists recently conducted a rigorous analysis of research on multiple intelligences.<sup>57</sup> Their findings "contradict Gardner's assertion that there are at least eight independent intelligence domains."<sup>58</sup> Because it lacks empirical support, Gardner's theory has never been widely accepted by psychologists who are not part of the educational establishment.<sup>59</sup>

As a result, parents should be skeptical when schools base their teaching on multiple intelligences theory. Considering how little empirical evidence there is for Gardner's theory, it is surprising just how much credence it receives in educational circles.

## 2) Everyone has a unique learning style

Flowing from the idea of multiple intelligences is the idea that each student has a unique way of learning and that teachers need to approach each lesson from all these perspectives. Of all the myths in education, this one has embedded itself most fully into the public consciousness. According to the learning styles theory, students learn best when they experience new concepts through their preferred or strongest learning style. For example, visual learners learn best when they see an image or picture; auditory learners prefer to hear verbal explanations; and tactile-kinesthetic learners need to feel things with their hands.<sup>60</sup> Thus, according to this popular theory, teachers should do everything possible to identify each student's learning style and incorporate different strategies to meet the specific needs of each student in their classrooms.

Obviously, this is an impossible task for even the best teachers; the expectation defies common sense. In addition, Daniel Willingham, a cognitive psychologist at the University of Virginia, explains that it is relatively simple to test this theory. Take a group of people and identify each person's so-called learning style. Then share a story with them, but let half of them experience the story through their preferred learning style. For example, the story could be conveyed by pictures to visual learners and recited verbally to auditory learners. If the theory is correct, people who experience the story through their preferred learning style will remember it better than those who did not.<sup>61</sup>

Psychologists Laura Massa and Richard Mayer of the University of California, Santa Barbara, conducted such a study several years ago. They used a standard questionnaire to classify each student in their experiment group as a visual or auditory learner. They found virtually no difference between students who learned a new concept through their preferred learning style and those who learned it a different way.<sup>62</sup> In other words, it did not matter if the instruction matched the students' preferred learning styles.

A review of the research literature on learning styles by psychologists Harold Pashler, Mark McDaniel, Doug Rohrer and Robert Bjork concluded, "[T]here is no adequate evidence base to justify incorporating learning styles assessments into general educational practice."<sup>63</sup> John Hattie, who has reviewed thousands of research studies on student achievement, firmly dismisses learning styles as a "modern fad" and "one of the more fruitless pursuits."<sup>64</sup>

Catherine Scott, a senior research fellow at the Australian Council for Educational Research, also agrees that there is no evidence that students learn best when presented with lessons suited to their individual learning styles. Scott argues that not only is the learning styles theory useless for classroom teachers, it is actually harmful because it causes teachers to label students, which prevents them from using effective teaching methods.<sup>65</sup>

However, this research evidence does not mean that teachers should teach every subject in exactly the same way. Many people have correctly suggested that

teachers need to vary their instruction methods to best suit the content and the students being taught. For example, visual images are probably more effective than verbal descriptions for helping most students understand the structure of Mayan pyramids.<sup>66</sup> Other topics lend themselves to verbal descriptions or hands-on projects.

The general principle of teaching that has been known from the time of Aristotle is that effective teachers present lessons in a variety of ways. Simply put, teachers should vary their instruction based on the content and the students they are responsible for teaching rather than try to present lessons that incorporate non-existent learning styles.

### **3) Technology is essential to learning**

A central feature of Alberta's "Inspiring Education" initiative is that all classrooms should incorporate advanced technology. In fact, the report claims,

If we are to shape the future of education and not have it shaped for us, we must become more purposeful in our approach to technology. We need to understand what may be emerging, its implications, and how it can be used for education.

Ultimately, the power of technology should be harnessed to support innovation and discovery, not simply to aid teaching. We need to engage learners to use these new technologies as designers and creators of knowledge.<sup>67</sup>

As a result, schools across the province are bringing various technology initiatives into classrooms. Some schools are encouraging students to bring their own devices to school, while other schools are providing iPads for their students. The Minister of Education obviously believes that the incorporation of technology is an essential component of 21st Century Learning.

However, before rushing to equip schools with the latest technological gadgets, it is prudent to ask whether this will improve learning in a cost-effective way. Consider, for example, the significant cost of purchasing, maintaining and upgrading technological devices such as iPads and the fact that some students will use the devices for non-educational purposes such as playing games or updating their Facebook accounts. Before wholeheartedly buying into the use of technology in classrooms, we need to ensure that this is not another expensive fad.

Peter Reimann and Anindito Aditomo of the University of Sydney in Australia recently reviewed the research literature on the impact of technology on student achievement and concluded that most studies show only a moderate academic benefit from the use of technology and that "the effect of computer technology seems to be particularly small in studies that use either large samples or randomized control groups."<sup>68</sup>

In other words, the most rigorous research reveals that the wholesale introduction of up-to-date computer technology into classrooms has, at best, only a relatively minor impact on student academic achievement. Parents and teachers should

ask whether the modest benefit is worth the cost and whether it justifies making technology the focus of school reform. We know that the effects of other less expensive interventions such as increasing the amount of time students spend on academic tasks increase the academic performances of students much more than the use of up-to-date computers does.

Larry Cuban, a professor of education at Stanford University, certainly does not think that using computer technology in classrooms is essential. In an article published in the April 17, 2013, edition of *Education Week*, Cuban shows that technology companies have said for decades that schools need the latest gadgets so that they can engage students in academic work. To make his point, Cuban quotes from an early typewriter ad that promises a student that the typewriter will “raise her marks,” a filmstrip projector ad that says it can help “pupils comprehend faster,” and an Apple ad that tells teachers that an Apple “makes it easy to become attached to your students.”<sup>69</sup> While the technological gadgets have changed over the decades, the overblown promises remain the same.

Overall, technology, used properly and in moderation, can be a valuable learning tool. However, parents should remain skeptical of grandiose claims made by manufacturers, teachers and administrators that these gadgets will have a revolutionary effect on their children’s educational performances. Plato did not need modern computer technology to educate his students; neither do good teachers need the newest gadgets to educate their students.

#### **4) Inquiry-based learning is the best way to learn**

In a recent letter to parents, Alberta’s Minister of Education, Jeff Johnson, sought to reassure them that his government’s curriculum changes are on a firm foundation:

And despite claims to the contrary, Alberta Education is not embracing or moving towards simply imposing so-called ‘discovery learning’. Some have suggested that teachers will only be a partner in learning and learners will be completely self-directed. I can tell you that nothing is further from the truth. Alberta has already embraced inquiry-based learning, which is an approach that is well documented and the basis of significant scientific study.<sup>70</sup>

Johnson is correct in saying that Alberta Education has been promoting inquiry-based learning for some time. In 2004, Alberta Education released *Focus on Inquiry: A Teacher’s Guide to Implementing Inquiry-based Learning*.<sup>71</sup> In short, inquiry-based learning relies upon students formulating questions, investigating answers and building new knowledge.<sup>72</sup> The constructivist approach emphasizes students developing their own knowledge base rather than being taught by well-educated, competent teachers.

However, Johnson’s attempted distinction between discovery learning and inquiry-based learning lacks credibility. Consider his Deputy Minister of Education’s comments on the anticipated revolution toward student autonomy and self-directed learning:

This vision of embracing student autonomy as sacrosanct is not new in theory, but entirely new in practice. Instead of making things more comfortable for labor groups (eg. less supervision, more prep, smaller classes) and expecting that to transfer to better learning outcomes, the focus needs to shift on what the learner needs and wants with emphasis on transforming teacher practice.... We must prepare for the inevitability that high schools, for example, will become registration and accreditation centers in the future as we provide flexibility and options to learners—driven by the learners themselves not the education system, and that cursive writing will be a lost art form of expression.<sup>73</sup>

Clearly, the change envisioned by both the Deputy Minister and the Minister are neither moderate nor restrained. By describing student autonomy as “sacrosanct,” Bass fully embraced the extreme version of discovery or inquiry-based learning. Presumably, he was appointed deputy minister because his knowledge and vision for education reflect the direction the Alberta government intends to move schools, teachers and students.

In addition, Johnson overstates the case for inquiry/discovery learning. While it is true that inquiry/discovery learning can be a helpful way of learning a process (i.e., the scientific method), it is considerably less effective in helping students master academic content.<sup>74</sup> That is because a skilled teacher can do a much better job of distinguishing between relevant and irrelevant information than can a student grappling with a topic for the first time.

Ironically, some research suggests that low-ability students often prefer discovery learning methods, but they usually learn less than they would from direct instruction.<sup>75</sup> Of course, students need opportunities to discover things, but not all the time and especially not at the expense of learning important facts. Good teachers have always used a balance of direct instruction with inquiry-based exercises. This shows the fundamental fallacy with regarding student autonomy as sacrosanct—students often do not know what is in their own best interests, and teachers are not recognized as being authorities who can help students distinguish between a good understanding and a poor understanding of a subject.

## Resources for parents

Parents may want more help in sorting through education myths. If so, they can consult the following resources. Daniel Willingham’s *When Can You Trust the Experts? How to Tell Good Science from Bad in Education* explains how to distinguish between solid and flaky educational research.<sup>76</sup> Daisy Christodoulou’s *Seven Myths about Education* and Tom Bennett’s *Teacher Proof* also explore many of these myths.<sup>77</sup>

# Report cards should make sense

Over the last year, Battle River School Division was the scene of an intense controversy because it had eliminated percentage grades from report cards and replaced them with a four level Alpha grading scheme. In all subjects and all grades, students were rated as “Beginning,” “Developing,” “Achieving” or “Excelling.” As many people reading this handbook will know, this new policy did not appeal to either students or their parents because it lacked the clarity and precision of percentages. If anything, parents want the reports on their children’s achievement to be precise and clear. After a huge pushback from students and parents, the school trustees reluctantly voted to return to percentage marks for Grades 10 to 12 students, although they kept the new grading scheme for grades K-9.<sup>78</sup>

A similar battle recently took place in the Northern Lights School Division, which eliminated percentages on K-8 report cards in 2012. Their four-level grading scheme consisted of “Needs Improvement,” “Progressing,” “Proficient” and “Exemplary.” Not surprisingly, parents strongly objected to this new system and petitioned the school board to reverse its policy. School board officials initially defended the system because it was consistent with the government’s “Inspiring Education” initiative.<sup>79</sup> However, after hearing from parents, the school trustees reluctantly voted to return to using percentages in Grades 5 to 8 report cards.<sup>80</sup>

Canada’s most famous grading controversy took place in Edmonton at Ross Sheppard High School. Physics teacher Lynden Dorval was suspended and eventually fired for defying his principal’s no-zero policy. In this case, the public response to Dorval was overwhelmingly supportive. Students rallied to his defence; teachers spoke in his support; and newspaper pages were filled with editorials and letters attacking the no-zero policy. Even an online poll conducted by *Edmonton Journal* reported that more than 97 per cent of the 12,486 respondents opposed the no-zero policy.<sup>81</sup> Nevertheless, it took several months for the Edmonton Public School trustees to rescind the policy and adopt a new policy that explicitly permits teachers to give zeros for incomplete work.<sup>82</sup> Fortunately, Dorval got a new job with a private school in Education.

Many parents wonder why school boards composed of trustees who supposedly represent the interests of parents and students have adopted bizarre grading practices and only retreat (sometimes) in the face of significant public opposition. Let us look at where these ideas originated.

## Common sense and report cards

Grading practices have changed significantly over time. For many years, teachers determined students' grades without having policies dictated by school boards. Teachers reported percentage grades for all students in their courses, and often the range was from below 50 per cent to almost 100 per cent. Understandably, the grading practices varied by subject area and teacher. In fact, there was often a wide variety of practices, some more valid than others. However, beginning about two decades ago, researchers began examining how teachers grade their students.<sup>83</sup>

Assessment experts emphasize that it is important to ensure that grades are valid and reliable. Validity means that grades convey appropriate information about the specific achievement in the subject while reliability means that the grades are consistently accurate.<sup>84</sup> In other words, tests that are valid measure what they are designed to measure and nothing more, and reliable tests will give similar results for the same student if the test is administered a number of times.<sup>85</sup> Assessment experts and many teachers prefer outcome-based reporting of grades in which the students' achievements are reported separately for each outcome or performance standard.

Many of these individuals are also critical of incorporating behavioural factors such as attendance, attitude, effort, participation and punctuality into final grades for subjects. They argue that behavioural factors should be reported separately on the report card and should not affect the students' academic grades.<sup>86</sup> Most people agree that separating intellectual understanding from behaviour and reporting the results separately is reasonable. However, problems develop when this general principle becomes a rigid rule.

For example, because the time at which a student hands in an assignment is considered a behavioural factor, many assessment consultants say that students should never receive academic penalties for late or incomplete work. Similarly, given that plagiarism is also a behavioural choice, these consultants often argue it is inappropriate for guilty students to receive a mark of zero for plagiarized work. In these cases, they contend, students should have another opportunity to complete the work properly, and their marks should reflect their actual achievement rather than their behaviour or the time of submission.<sup>87</sup>

As we saw in the Lynden Dorval case, turning the separation of behaviour and achievement into an absolute rule for teachers leads to problems. Sometimes behaviour has a direct impact on achievement, particularly when students choose not to hand in their assignments on time. In these situations, teachers should be able to incorporate lateness and/or incompletes into students' final grades. Thus, blanket no-zero policies are not appropriate.<sup>88</sup>

As for percentage grades, there is no good evidence that shows that students are positively affected by reporting their achievement in categories (i.e., meeting a standard or not meeting a standard) and not using percentages on report



cards. Percentage grades often give the most refined indication of the students' performances, and this is often a compelling reason to use them on report cards. In fact, the arguments used by school boards for removing percentage grades are surprisingly weak.

For example, Grande Prairie Public School District posted an article titled "Understanding Your Child's Report Card" on its Website. Under the heading "Why use achievement standards and not percentages..." it states that the district will not use percentages and class averages because

- the *average* is a moving target that may go up or down
- no matter how hard they work, and no matter how much they learn, up to half of all students are always below average
- Judgments about a student's achievement are based on the achievement of others.<sup>89</sup>

Of course, we can see that these reasons are about class averages and not about percentage grades given to students. This school board lumped together two separate issues under the same question and apparently hoped that parents would not notice. These types of arguments are, of course, an insult to the intelligence of parents.

Golden Hills School Division also published an article to explain its new outcomes-based reporting system. In the only direct reference to percentages, it states, "A letter grade or percent lumps all the learning objectives together along with non-academic factors that holds little meaning."<sup>90</sup>

However, this argument mixes up two separate issues: separation of behaviour and academic achievement and percentages versus achievement levels. Good teachers easily separate behaviour from achievement in their marking process regardless of whether they are using percentages or achievement levels. Percentage grades provide a quick snapshot of a student's overall performance. Parents want to receive this type of information.

Well-known assessment guru Ken O'Connor makes another argument against percentages. He thinks percentage grades have too many performance levels. "The basic problem with the percentage system is that it has too many levels (101). This implies a precision that simply does not exist, because no one can describe the difference between 71 and 73 percent."<sup>91</sup>

O'Connor is wrong to assume that the percentage system has too many levels. If a teacher gives a test with 100 multiple-choice questions, then it is not difficult to explain the difference between 71 and 73 per cent—the student with 73 answered two more questions correctly than did the student with 71. Of course, the difference between these two students is minor, *but that is exactly what we would expect in this situation*. There is obviously a bigger difference between students who are twelve percentage points apart than there is between students separated by only two percentage points.

In addition, students and parents have no difficulty understanding that percentages are not always precise. A student who writes a test and receives a mark of 17 out of 20 may have her mark converted to 85 per cent. Obviously, there would be no difference between an 85 per cent and an 86 per cent in this case, but that does not matter since no one could get 86 per cent on the 20-point test anyway.

All percentage marks in this case would appear in sets of five (0, 5, 10, 15, etc.). In this instance, the mark is converted to a percentage not because it is needed for accuracy, but because it is easier to compare with marks from other tests and assignments that the student has completed or will complete. It is also easier for parents to understand.

At the end of the day, school trustees can slavishly adhere to guidelines proposed by some assessment gurus, or they can listen to the many parents, students and teachers who want percentage grades used on report cards. Since the public elects trustees, they have an obligation to listen to the concerns of parents, students and teachers.

**“At the end of the day, school trustees can slavishly adhere to guidelines proposed by some assessment gurus, or they can listen to the many parents, students and teachers who want percentage grades used on report cards.”**

## Where to go from here

The most concerning aspect of “Inspiring Education” is that it de-emphasizes factual knowledge, which has been an important part of education for thousands of years, and emphasizes the process of learning. Incredibly, the report claims the following:

In times past, a person was considered knowledgeable if they [sic] merely possessed information (or ‘content’). As technology makes information instantly available, it is no longer possessed solely by experts. Additionally, as the pace of change increases across the globe, the meaning of the word ‘knowledge’ is changing. As we focus more on competencies, there will be less emphasis on knowing something, and more emphasis on knowing how to access information about it.<sup>92</sup>

The main message is that students no longer need to learn facts in school because they can look them up on the Internet. In essence, the report asks, “Why teach something that will be obsolete within a short period of time?” The Deputy Minister of Education, Greg Bass, answers the question by saying, “Why can’t students collaborate on building understandings of curricular outcomes together through a Google document?”<sup>93</sup>

In other words, the Deputy Minister of Education in Alberta thinks that in the future students will not need to know anything more than how to use computers to look up information on the Internet. Obviously, parents will begin to wonder why Alberta needs schools and teachers because most children already know how to look up information on the Internet before they go to kindergarten.

However, as noted earlier, factual knowledge is still an essential component of all subjects taught in schools, especially learning how to read and do mathematics. A student who possesses background knowledge about a subject is more likely to understand an article about that subject than is a person who is ignorant of the subject. Even when it comes to looking up information on the Internet, background knowledge remains important. In fact, British educator Daisy Christodoulou puts it well in her book *Seven Myths about Education*:

You can only rely on being able to look up something when you know quite a bit about it to begin with. Being able to research something effectively is undoubtedly an important skill. But it is a skill that is dependent on broad knowledge. If we want our pupils to be able to look things up, then rather than focus solely on abstract and generic strategies, we need to make sure they have such broad knowledge, too.<sup>94</sup>

Most parents will probably agree that factual knowledge remains as important today as it ever was. Even Deputy Minister of Education, Greg Bass, knows Alberta teachers must possess factual knowledge about his beloved “Inspiring Education” initiative in order to properly implement the policies in the document. Most parents realize that a person cannot think critically about something that he

or she knows nothing about.

Clearly, the Alberta government is on the wrong track with “Inspiring Education.” Not only are the ideas in the 21st Century Learning report old, neither evidence nor common sense supports them. Research studies clearly show that when it comes to improving student achievement, traditional teacher-directed instruction along with rigorous assessment is better than the inquiry/discovery approach and weak assessment. Students benefit from rich curriculum content, structured classrooms and knowledgeable teachers, and they benefit from being told exactly how well they know the material.

Parents do not need to accept meaningless platitudes from Alberta Education bureaucrats or school administrators. Parents should not be intimidated by the claims many of these people make that “research proves,” especially when the person making the claim cannot support it with good empirical evidence or common sense. If enough parents are moved to take action, “Inspiring Education” can be changed by the provincial government. Parents can follow the example of Dr. Nhung Tran-Davies and work together to demand real changes. People elect governments, and the people should have much more say over what happens in their schools.

The same can be said of report cards. People elect trustees, and they have the power to bring back percentage grades on report cards. This will only happen, however, if parents voice their concerns loudly and clearly. Parents should lobby both their local school boards and the provincial government.

In short, parents need to rise up and advocate for the return of common sense to the education of their children. It is your school system, and you should take it back.

**“Clearly, the Alberta government is on the wrong track with “Inspiring Education.” Not only are the ideas in the 21st Century Learning report old, neither evidence nor common sense supports them.**

# Additional resources for parents

## Books

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- Daniel Willingham. <http://www.danielwillingham.com/>
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- Jump Math. <http://jumpmath.org/cms/>
- Michael Zwaagstra – *Common Sense Education.* <http://michaelzwaagstra.com/>
- Schoolhouse Consulting. <http://www.schoolhouseconsulting.ca/>
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- The Thomas B. Fordham Institute. <http://edexcellence.net/>
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## Further Reading

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# Differentiated Instruction is an Unproven Fad

Michael Zwaagstra

[http://www.fcpp.org/files/1/PS154\\_UnprovenFad\\_SP03F1.pdf](http://www.fcpp.org/files/1/PS154_UnprovenFad_SP03F1.pdf)

August 2012

# Zero Support for No Zero Policies

Michael Zwaagstra

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