

Memory and Learning History: What the Research Tells Us

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About the Author:

Gary Simons was a 30 year veteran of the classroom before retiring. Teaching History is his first love but over his career he has taught over 35 different subjects and levels at Thousand Islands Secondary School in Brockville, Ontario, on exchange in Australia, and on line at the Virtual High School (Ontario). This diversity of experience has given Gary a wider perspective and understanding of the teaching-learning dynamic. Gary has experimented with just about every form of teaching: traditional classroom work, small team work, simulations, hands-on learning and multiple intelligences strategies, developing cognitive skills and inquiry skills, collaborative projects, mastery learning and credit recovery programs, computer based instruction, whole class projects, and mega projects involving an entire school. He has been an associate teacher for Queen's University and Potsdam SUNY for the past twenty years and has worked with many teacher-candidates as well as dozens of colleagues, helping them learn how to be more effective in teaching History. In 2003 Gary received the Governor General's Award for Excellence in Teaching Canadian History in recognition of his achievements.

The Research Background to this Report

When I reflect on why I taught the way I did, there's a nagging question at the back of my mind. How effective were my teaching methods and my teaching style? On the one hand I can say a few things in my defense : I can point to the teachers I liked and how they taught me, and to what I was taught at Fac. Ed. Most students seemed to like my classes. Not too many fell asleep, looked horribly bored, or were openly insulting to me. Parents seemed to like what I was doing and I didn't get fired. But there's another dimension to the question. Just because people in my past taught me a certain way, or that I felt good about how I taught, does this mean that my approach to teaching and my teaching methods were effective? Is replication and self-assessment the best measures of success in teaching?

That question was the origin of this article. I decided to find out what recent research can tell us about the process of effective teaching and learning. Can neurological and psychological research teach us how to be more effective teachers? I've taken recent research findings on learning and understanding and filtered them through my thirty years' experience to try to develop more successful ways to help students learn.

Among the studies I will refer to are:

Harvard University Project Zero studies :

ALPS = Active Learning Practices for Schools

Tfu = Teaching for Understanding <http://learnweb.harvard.edu/ALPS/tfu/>

The Teaching for Understanding project was a five-year research program that focused on teaching and learning in four subjects (English, history, math, and science) and interdisciplinary studies. The main findings can be found in:

The Teaching for Understanding Guide. Tina Blythe and Associates, Jossey-Bass, San Francisco. (1998)

“How Does the Brain Remember the Places of Your Past?” Psychology Today, Nov 30, 2013
<https://www.psychologytoday.com/ca/blog/the-athletes-way/201311/how-does-the-brain-remember-the-places-your-past>

“How are memories formed?” University of Queensland Brain Institute, July 23, 2018
<https://qbi.uq.edu.au/brain-basics/memory/how-are-memories-formed>

How Students Learn, George Brown, A supplement to the RoutledgeFalmer **Key Guides for Effective Teaching in Higher Education** series (2004)

How Students Learn History in the Classroom, M. Suzanne Donovan, John D. Bransford
National Academies Press, National Research Council (2005)

“The Human Memory”, 2018 http://www.human-memory.net/processes_encoding.html

Learning Modalities: Pathways to Effective Learning Dr. Patricia Hutinger (Nov. 2001)
www.pbs.org/teachers/earlychildhood/articles/learningmodalities/html

Learning Styles: Unlock your True Potential, Dunn and Dunn <http://www.learningstyles.net/>

Magic Trees of the Mind, Diamond M. & Hopson. J., Dutton, New York (1989)

“Teaching for Understanding”, David Perkins, ***American Educator: The Professional Journal of the American Federation of Teachers***; (Fall 1993).
<http://www.exploratorium.edu/IFI/resources/workshops/teachingforunderstanding.html>

“The Neuroscience of Forming New Memories”, Psychology Today, July 20, 2015
<https://www.psychologytoday.com/ca/blog/the-athletes-way/201507/the-neuroscience-forming-new-memories>

Teaching for Understanding : Questions to ask Yourself and Your Students
Chris Unger, former Professional Development Director at Project Zero, Harvard Graduate School of Education. <http://www.newhorizons.org>

Understanding by Design : The Importance of Understanding
By John L. Brown - based on the principles of ***Understanding by Design*** by Grant Wiggins and Jay McTigue <http://artsedge.kennedy-center.org/content/3646/>

“What Do We Know from Brain Research?”

Pat Wolfe and Ron Brandt, *Educational Leadership* Nov. 1998 “How the Brain Works”

www.enhancelearning.ca

How are Memories Created, Stored and Retrieved

Here is a short summary of recent research and theorizing on how the brain creates, stores and recalls memories. (My apologies to any neurological or cognitive researchers who may find this too simplistic). This process gives us clear clues on how to make our teaching more effective. This is a synthesis of information from:

The Neuroscience of Forming New Memories, Psychology Today, July 20, 2015
<https://www.psychologytoday.com/ca/blog/the-athletes-way/201507/the-neuroscience-forming-new-memories>

How Does the Brain Remember the Places of Your Past? Psychology Today, Nov 30, 2013
<https://www.psychologytoday.com/ca/blog/the-athletes-way/201311/how-does-the-brain-remember-the-places-your-past>

How are memories formed? University of Queensland Brain Institute July 23, 2018
<https://qbi.uq.edu.au/brain-basics/memory/how-are-memories-formed>

The Human Memory, 2018, http://www.human-memory.net/processes_encoding.html

Steps in the Memory Process:

1. External stimulations (sights, sounds, tastes, etc.) are received by neural receptors in our sensory organs (eyes, ears, taste buds, skin, nose). These organs send impulses via neural pathways to the somatosensory cortex of the brain, which decodes and make sense of the neural signals. Neurons in the somatosensory cortex send these impulses onwards to the hippocampus and related regions on the Medial Temporal Lobe.
2. The hippocampus analyses the neural impulses and seeks connections between the new neural messages and existing neural pathways. The stronger the neural impulse or the more the new impulse can be connected to existing neuron pathways or patterns – the greater the possibility the new information will go into long term storage. If the new impulses can be linked to existing neural pathways, they will become consolidated in our long term memory in a two-step process: synaptic consolidation (which occurs within the first few hours after learning or encoding) and system consolidation (where memories become independent of the hippocampus over a period of weeks to years).

3. The connections – called synapses – between brain cells can be made stronger or weaker depending on when and how often they have been activated in the past. Active connections tend to get stronger, whereas those that aren't used get weaker and can eventually disappear entirely. When the same group of neurons fire together often they become permanently sensitized to each other. As a neuronal pathway, or neural network, is traversed over and over again, an enduring pattern is engraved and neural messages are more likely to flow along such familiar paths of least resistance. This makes memories stronger and quicker to be accessed. If memories are not recalled, the neural pathways weaken making the memory fragile and easily eroded with time.

4. Long term memories are not stored in just one part of the brain, but are widely distributed throughout the cortex. After consolidation, long-term memories are stored throughout the brain as groups of neurons that are primed to fire together in the same pattern that created the original experience, and each component of a memory is stored in the brain area that initiated it. As new experiences accumulate, the brain creates more and more connections and pathways, and may “re-wire” itself by re-routing connections and re-arranging its organization.

5. Human memory is fundamentally associative, meaning that a new piece of information is remembered better if it can be associated with previously acquired knowledge that is already firmly anchored in memory. The more personally meaningful the association, the more effective the encoding and consolidation. Meaning and associations that are familiar tend to lead to improved recall. On the other hand, information that a person finds difficult to understand cannot be readily associated with already acquired knowledge, and so will usually be poorly remembered.

6. Because of the associative nature of memory, encoding can be improved by techniques where new pieces of information are associated with other information already recorded in long-term memory. This incorporates the new information into a wider, already familiar and coherent narrative which strengthens retention and access to the memory. Using key words or mnemonic study techniques are good examples of memory elaboration. When we use such study techniques the study information passes through the hippocampus multiple times, strengthening the neural and synaptic connections and strengthening subsequent memory recall. The more a neural pathway is activated, the stronger the synaptic connections along the way become.

7. Technically, memory recall is the reactivation of a specific group of neurons, formed from persistent changes in the strength of connections between neurons. Recalling a memory involves re-activating a particular group of neurons. In the recall process, the brain "replays" a pattern of neural activity that was originally generated in response to a particular event. Memory retrieval requires re-visiting the nerve pathways the brain formed when encoding the memory. The relative strength of those pathways determines how quickly the memory can be recalled. Recall effectively returns a memory from long-term storage to short-term or working memory, where it can be accessed, in a kind of mirror image of the encoding process. It is then re-stored back in long-term memory, thus re-consolidating and strengthening it. The more often a memory is recalled, the stronger the neural and synaptic connections become, allowing the memory to become stronger and more easily and quickly recalled.

Ten Ways to Help Students Learn History

1. Students need to see the “Big Picture”. Students need lessons that have a direction, purpose, structure and lead to clear conclusions. Learning is much more difficult when students do not see where the instruction is headed. Students also want a good answer to the question: “Why should I learn this?”
2. Students learn better when teachers look at learning from the students’ point of view. Students need methods of instruction that suit their learning styles and “learning profiles”.
3. Students need to have new information or skills connect with what they already know. Learning is much easier when new information has connections to prior knowledge.
4. Students need to get their mental processes and memories warmed up before learning new material. I call this “Priming the Pump”.
5. Students need instruction that is very stimulating. The more stimulating the lesson is – without overstimulation – the stronger the memory connection in the brain. Students learn better when we put our passion for learning into our teaching.

6. Students must use or mentally manipulate new learning repeatedly in order to really know it. The more often our brain uses the same information, and the more ways our brain uses information, the more likely it is to be remembered.

7. Students learn better when they gain understanding, not just knowledge acquisition. Students also learn better when they understand “Historical Thinking”.

8. Students learn better when they have some control of their classroom time and the ways they learn.

9. Students learn better when they gain a sense of accomplishment and success from our classes.

10. Students learn better when teachers try new things, take some risks and “dream big”.

1. Students need to see the “Big Picture”. Students need lessons that have direction, purpose, structure and lead to clear conclusions. Learning is much more difficult when students do not see where the instruction is headed.

Students want to know: “Why should I learn this?”

All of us relax and feel better about new information presented to us when we see the purpose or reason behind the learning. Imagine going on a car trip and the driver simply says, “Get in”, and refuses to provide any further information no matter how many questions you ask. Would we enjoy the ride? Would we learn from the ride? Likely not. Most of us would quickly begin to resent the ride. We’d see it as a waste of time, or a theft of our time when we could be doing something else.

As teachers and subject professionals we know (or should know) why we want the students to learn from our lesson. Too often, however, we do not share this with the students at all. They are the unwilling passengers on our car ride – which seriously limits their desire to learn from the ride.

Human memory is associative, meaning that new information is remembered better if it can be associated with previously acquired knowledge already firmly anchored in memory. When a student knows the bigger picture behind new learning, they can connect it to their existing experiences and memories. The brain connects the new learning to existing neural connections, making the new information easier to understand and remember. On the other hand, information that a person finds difficult to understand cannot be readily associated with already acquired knowledge, and so will usually be poorly remembered.

Always know where you are going with your curriculum, your unit of study and your lesson plan. Determine the “Essential Understandings” – information, concepts, skills – that the students need to acquire - for the entire course, for each unit of study for each lesson. The “essential understandings” must be appropriate and suitable for the specific needs and abilities of your students. What’s the key information you think the students should learn about this topic? Then find a way to make this come alive.

In our lessons we need to:

At the start of the course provide students with a “road map” of the planned course: key topics, concepts, themes, skills. Continually refer back to this during the term, showing what has already been achieved and what lies ahead.

Show the students how each lesson connects to past lessons and to future ones in terms of concepts, themes, skills.

Clearly explain what the purpose and expected outcomes of each lesson.

Explain and demonstrate connections between the skills, concepts, themes and content of this lesson with past lessons. Refer back and quickly review key points connected to past classes.

Create displays or Smartboard images that show student progress in the course, review key themes or skills.

2. Students learn better when teachers look at learning from the students' point of view. Students need methods of instruction that suit their learning styles and "learning profiles".

In his 2001 book, *Historical Thinking and Other Unnatural Acts*, Sam Wineburg argues that our "package" of previous knowledge, perspectives, interests and skills means that our brains respond to new information in different ways than our students do. We have become trained to look at the world and the past in very different ways from average people. What we find fascinating they may find pointless. New information that quickly connects to our existing memories finds no connections in theirs. We need to understand where our students are "coming from" as learners in order to present our material in a way their brains will respond to.

We cannot assume that students see learning History in the same way that we do:

We usually love to read

We find History intrinsically interesting

We are disciplined learners

We are in control of our learning

We have been trained to think in Historical ways

We feel successful when we study History

We have a huge accumulated body of knowledge and life experience that gives us perspective on events, reference points, the ability to make sense of new information

To be successful with today's students we have to understand and accept that many students see education far differently than we do:

- Their learning styles and dominant "intelligence" may not be the same as ours, and their strongest style may not be conducive to studying History
- Their intelligence, strength of memory may be different than ours
- They may have learning difficulties and handicaps that require accommodation
- Their ability to focus, powers of concentration, learning skills aren't the same as ours
- Our awareness of cultural and social differences and needs will be different than theirs
- What they find interesting is different than what interests us
- What they are most successful at – as students and in life – is different than our areas of high success
- They may see no rewards, only frustration and failure in trying to study History

We need to learn more about our students at the start of the course through conversations, interest surveys and student biographies. What are their interests? How do they understand things? How do they like to learn?

3. Students need to have new information or skills connect with what they already know. Learning is much easier when new information has connections to prior knowledge. This makes new content more understandable because it fits into an existing context.

Neurological research tells us that our brain tries to make a connection between new sensory input and existing information stored as electric impulses. The brain takes only a few micro-seconds to determine whether new sensory input should be retained or discarded. If the new input makes a connection to existing memories there is a much higher chance it will be retained. The stronger the connection is between new input and existing memories, the stronger the synaptic and neural connections become, and the stronger the retention. When we hear a song we like and we've heard many times better, or watch a movie, or repeat a physical motion - we feel positive about the experience and strengthen our mental connections because our brain is dealing with something positive and familiar. In other words- we are re-enforcing our learning. When we are exposed to something entirely new, our brain reacts differently- and likely negatively.

Go from the “known to the unknown” with your students: build connections to the new material. Make continual connections between what they know and what you want them to learn. What do they already know that can help them make connections to your new knowledge. Use analogies or parallels between existing student knowledge and the new material to be learned:

- Use commonly understood numbers or distances

- Refer to types of behaviour and situations they've witnessed with family, friends, or at school

- Use a modern equivalent situation comparable to one from the past

- Refer to rules, concepts, generalizations they already understand

e.g. This means we need to find ways to connect our lessons to our students' interests. Can lesson content be connected to the NHL or other sports, to teen celebrities, to popular t.v. shows and movies, or to student day-to-day experiences? A fight at school helps explain how WW1 started, the Greek-Persian wars can be related to a hockey game between an underdog and a favourite, sizes and distances are related to local landmarks.

4. Students need to get their mental processes and memories warmed up before learning new material. I call this “Priming the Pump”.

“Prime” students for the learning experience before an input activity by:

- *Asking questions to help students identify what they already know about the content*
 - *Providing students with direct links between new content and old content*
 - *Providing students with ways of organizing the new content or thinking about the new content*
- **What Works in Schools: Translating Research into Action**, Robert J. Marzano,
Association for Supervision and Curriculum Development (2003)

As teachers, we are already mentally warmed up at the start of a lesson. We’ve been thinking about and planning the lesson for some time and we know we have to be mentally primed and energized when we enter the classroom. That’s not true about our students. Depending on how they feel about us and our subject, and depending what they experienced before they enter the class, there’s a good chance their brains are at a low energy level.

We need to change this. We need to quickly create activities that get their brains working before we launch into new learning. This ensures that the students are as receptive as possible when new content or skills are presented. Such mental warm-up activities can also help lead a student from what they already know, towards something new and unknown. This helps establish connections between existing knowledge, concepts and skills and new learning. A warmed-up, stimulated brain works better and remembers more.

To achieve this the teacher must find ways to warm-up a student’s thinking before presenting the main lesson:

Ask students to write down what they already know about a topic:

“What have you heard about _____?”

Get students to draw you a picture to illustrate their knowledge of the topic. “When I say the word ‘War’ what do you picture?”

Ask students to name movies/t.v. shows related to the topic

Ask students to recall a similar situation from their own lives . . .

“Have you ever been in this position?”

Ask the students to connect the new topic or problem to things from their own lives

Do a questionnaire or a poll related to the topic . . . “What do you know about?”

Tell a story or anecdote connected to the new content

Present a puzzle or mystery connected to the new content

Show them artefacts or interesting article related to the problem

Show them images, maps, tables, graphs that lead to a key question students should ask themselves

Present a puzzle or mystery

Show a highly engaging video clip, song

5. Students need instruction that is very stimulating. The more stimulating the lesson is – without overstimulation – the stronger the memory response in the brain.

We need to support learning with powerful representations. Research shows that how information is represented can influence enormously how well that information supports understanding performances.

- *“Teaching for Understanding”*, David Perkins, **American Educator:**

The Professional Journal of the American Federation of Teachers; (Fall 1993)

<http://www.exploratorium.edu/IFI/resources/workshops/teachingforunderstanding.html>

Students learn better when we put our passion for studying History into our teaching

Students pick up on your energy - or lack of it. If you find something interesting chances are you'll find a way to transmit that interest to your students. Sometimes it takes a while to figure out how to get students to share your interests, but once you find a way to get them involved they'll be hooked!

Your passion can make learning come alive. It can inspire you and your students to go beyond the expected and the ordinary in your class. Passion can help push you to better and better teaching.

There are many students who do not find History innately interesting. Many students have not enjoyed their past experiences in History because their teachers were not able to find a way to make it interesting - too many subjects to cover - with no understanding or personal interest in it. Many teachers don't have the time or resources to do much. History becomes too many names and dates, too cut and dried. Too often teachers present History in a totally bloodless and colourless way.

Many students see all History as a set of pre-determined events, a procession of names and dates. Many teachers approach history this way because it's easy to present what is in the textbook. This is how many teachers had it taught to them. It's easy to do and it keeps History teaching simple. In many cases busy teachers do not have time to obtain any in-depth knowledge beyond the text book's details. That takes the interest and energy out of the subject and gives people a distorted view of the past. When we make decisions today, we do not know what will happen next. Have we made good choices or poor ones? We don't know - and we won't know for years to come. I like to present history in the same way. This brings history alive because the students are interacting with it. They start asking me the key questions because they want to know what to do, or how best to solve a problem

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History has primarily been taught orally and verbally - through reading and listening .Many students respond better to other teaching styles. They need visual or tactile stimulation to learn. Having objects for students to handle, to feel, to smell, as well as to see, hear or read is essential. History should also have emotional appeal - because real life is full of emotion. Displays should not be emotionless, they should promote feelings of pride, fear, uncertainty, anger or horror. Good storytelling can help achieve this, so can effective use of multimedia. Good history teaching, in part, is a theatrical experience, rich in sensory appeal.

Let students learn about native life by facing hands-on challenges - find food in the forest, making tools or building shelters from scratch, trying to hunt using spears or other hand-made methods, starting fires in the ways of ten thousand years ago. Let students figure out how to build Stonehenge, or a pyramid, using scale model materials and videos about the actual sites. Let them “fight” as Greek hoplites, Roman legionnaires and gladiators, medieval knights, and World War One soldiers to see how accurate the movies and novels are. Let them plan attacks on Vimy Ridge and D-Day using maps and information from the time period.

6. Students must reinforce or exercise new learning repeatedly in order to really know it. The more often our brain uses the same information, and the more different ways our brain uses information, the more likely it is to be remembered.

Our memories require that we be exposed to new information repeatedly before we can recall it easily. The more we use it, the better we remember it.

- **“What Do We Know from Brain Research?”** Pat Wolfe and Ron Brandt, *Educational Leadership* Nov. 1998, “How the Brain Works” www.enhancelearning.ca

When our brain is exposed to new sensory information, it makes a micro-second decision on what to do with the new message – store it or discard it. If the new message has a connection to existing stored impulses there is a much greater chance it will be retained. Our memories rely on micro-level electrical impulses flowing through synaptic connections. These connections become more powerful and function more quickly the more times they are used. The more a student is exposed to and is required to use information or skills, the more they will remember it and become more proficient at manipulating it in different situations.

We need to find ways to repeat key concepts, themes, understandings and skills throughout a lesson, and from lesson to lesson. Notetaking, review games, activity sheets/ fill in the blanks/crossword puzzles, image analysis, student created review activities, summation exercises, drawing images, review q and a, are all ways to repeatedly use stored information.

During and after the learning experience students are engaged in synthesizing the knowledge in both linguistic (summarizing, note-taking) and non-linguistic ways (pictures, symbols).

Help students synthesize new information by:

- Asking students to take notes on content
- Asking students to construct verbal and written summaries of the content
- Asking student to represent the content as pictures, pictographs, symbols, graphic representations, physical models or dramatic re-enactments
- Asking students to create mental images of the content

Robert Marzano’s 1998-2003 research findings:

Instructional Strategies	Percentile gain compared to “control group
Identifying similarities and difference	45
Summarizing and Note-taking	34
Reinforcing Effort/ Providing Recognition	29
Homework and Practice	28
Nonlinguistic Representations	27
Cooperative Learning	27
Setting Objectives/Providing Feedback	23
Generating and Testing Hypotheses	22
Questions, Cues, Organizers	22

- **What Works in Schools: Translating Research into Action,** Robert J. Marzano, Association for Supervision and Curriculum Development (2003)

7. Students learn better when they gain understanding, not just knowledge acquisition.

Conventional teaching introduces students to plenty of facts, concepts, and routines from a discipline such as history. But it typically does much less to awaken students to the way the discipline works-how one justifies, explains, solves problems, and manages inquiry within the discipline.

Yet in just such patterns of thinking lie the performances of understanding that make up what it is to understand those facts, concepts, and routines in a rich and generative way. Accordingly, the teacher teaching for understanding needs to undertake an extended mission of explicit consciousness raising about the structure and logic of the disciplines taught.

How Students Learn, George Brown, **Key Guides for Effective Teaching in Higher Education**, RoutledgeFalmer (2004)

- **How Students Learn History in the Classroom**, M. Suzanne Donovan,
John D. Bransford, National Academies Press, National Research Council (2005)

Students can repeat facts that are meaningless to them, but the chances are they will forget them quickly, because the information serves no clearly useful purpose. When a student goes from knowing facts, to understanding them, far more learning is taking place. Understanding means that information, concepts or skills are so well known that the student can apply them to new situations and make new connections they have not previously learned.

What demonstrates understanding?

being able to do something

teaching someone else

solving a related problem

asking productive questions

assessing others' performances

predicting and avoiding problems

performing in lots of different situations

saying how you came to understand

using an error to your advantage

being able to say why a performance is good

recognizing less than exemplary performances

Students learn better when they understand “Historical Thinking”

Historical thinking is an “unnatural act “. It’s not everyday thinking. It has to be explicitly taught and practiced.

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8. Students learn better when they have some control of their classroom time and the ways they learn:

Students need to be actively involved in making decisions and modifications to their learning efforts. Let students have some control of the learning process – topics, activities, use of social time – choices increase a student’s sense of ownership over their learning

Students also need to play an active role in the assessment and evaluation process, including clearly understanding and applying the evaluation criteria for which they are responsible

The major contributor to theories of how adults learn is Malcolm Knowles. He developed guiding principles of ‘andragogy’, ‘the art and science of adult learning’, based on assumptions about how adults learn. His research discovered that adults learn best when learning is:

- active
- self-directed
- based on problems
- related to their experience
- perceived as relevant to their needs
- intrinsically motivated.

Ways to give students some control over their learning:

- Offer choices in topics, activities, learning methods
- Ask students what questions they'd like answered
- Let students practice "Guided Discovery" learning:
Have students do independent projects where they pick the topic and the presentation method – based on clear guidelines or rubrics
Present a challenge and give teams of students control over how they go about solving it and presenting their solutions
- Let students do trial marking and self-assessments – based on rubrics - with an opportunity to make improvements to their work
- Have students do an end-of-unit evaluation looking at teaching methods, activities, choice of topics

9. Students learn better when they gain a sense of accomplishment and success from our classes

We all respond best when information is presented in ways we enjoy. We all respond best when we enjoy what we are doing. We all respond best when we experience success as a result of our efforts. Why should a Canadian History class be any different? What we have to bear in mind, however, is that we have to see things from the students' perspectives, not ours. What learning methods are best for the students? What makes them enjoy and activity? What helps them become successful? Our students are not simply younger versions of ourselves so we have to re-think our approach to how we teach Canadian History, to maximize their understanding and enjoyment.

How to create a sense of accomplishment?

How to engineer success:

- progressive, step-by-step, scaffolding – in small segments
- clear models, templates, instructions
- continual assessment, feedback aimed at enhancing success
- promoting more hands-on activities
- finding the right pace for the students, not the teacher
- projecting a sense of fun, fascination, and humour
- trying to build a positive rapport – "Charm" your students into loving Canadian history
- appealing to several learning styles in presenting information
- providing social time/ team time -
- being aware of learning difficulties and developing success strategies for students who have trouble with copying from board/overhead, have trouble reading or writing, have limited attention spans, or who cannot respond to particular learning styles

How to Provide for rich ongoing assessment.

Some students have never learned how to be successful on tests and assignments. There are “tricks of the trade”. Good ways to promote student success include:

- Showing students strategies for success on evaluated work:
- Teaching the development of skills necessary for success on assignments
- Helping students get started successfully on assignments
- Provide models or samples of good and poor past work to give students a clear idea of your standards and to raise their awareness
- Provide clear organization and structure for each step of the process
- Do trial markings with clear rubrics/ evaluation guides.
- Use collaborative strategies where the students offer constructive criticism to their partners or peers
- Promote creativity as part of the activity
- Allow for multiple methods of evaluation (the “many roads to success”concept)
- Provide timely intervention / remediation for students who are not initially successful
- Find ways to review that are fun and useful, such as review games based on t.v. shows, pairs review challenges, testing each other in a contest, row challenges, review using picture drawing, skits etc
- Teach them the art of studying and test preparation
- Help them know what to study and give them time and help to get their notes together and fill in any missing areas
- Show them how to create an individual study plan based on their learning style
- Teach memorization skills
- Teach them how to approach different types of test questions to maximize their chance of success
- Celebrate their successes as soon as possible
- Do a metacognitive review: What lessons have you learned about what you’d do differently and how could you do better next time?

10. Students learn better when you try new things, take some risks and “dream big”

Research tells us that students won't remember most of your day-to-day teaching. Some students will forget the details of entire years of schooling. Ask yourself what memories you have of each year of school. Often it's the big things we remember - the big game, the big trip, the big activity. Once you feel you've established yourself as a teacher and that your day-to-day work is going well, challenge yourself to try something big with your students.

Large scale activities can be a tremendous amount of work. I've worked on projects that have taken up to six months to put together. On every one of them there's been a time when I've questioned my sanity and vowed, “Never Again!”

I've had classes take almost two months to build a D-Day diorama. I've helped put together a full day Medieval Fair with over two hundred costumed re-enactors, with a three hour evening dinner theatre. I've organizing five day-long “Celtic Heritage Fair” schools program. Such projects can demand a lot of time and generate huge amounts of frustration, but there's a huge pay off when they are successful. Students gain pride, confidence, a strong sense of achievement, as well as a little subject knowledge thrown in on the side. These projects can be a student's single greatest memory of school.

Once you feel you've established yourself as a teacher and that your day-to-day work is going well, challenge yourself to try something big with your students. Dream big and see where it takes you. Chances are you'll grow as a teacher in ways you never expected. Chances are your students will grow in ways you never expected. It's worth the effort.