

Examples

Professional learning communities across the educational system

Students navigate this path;

Each educational unit
should not be isolated, but
should function together
seamlessly within the
overall system



Communities:

- Local collaboration committees which bring teachers from local high schools, regional CÉGEPs, area universities, and even industry together.
- Discuss alignment at each level: methods and modules which can be adapted and applied at each level to streamline curriculum; and meaningful assessments which prepare students for each successive challenge.
- Focus on results and not ideal outcomes: ensuring learning for all students.

Atelier 801.9

Local collaboration groups in mathematics and science

Karim Jaffer... John Abbott College

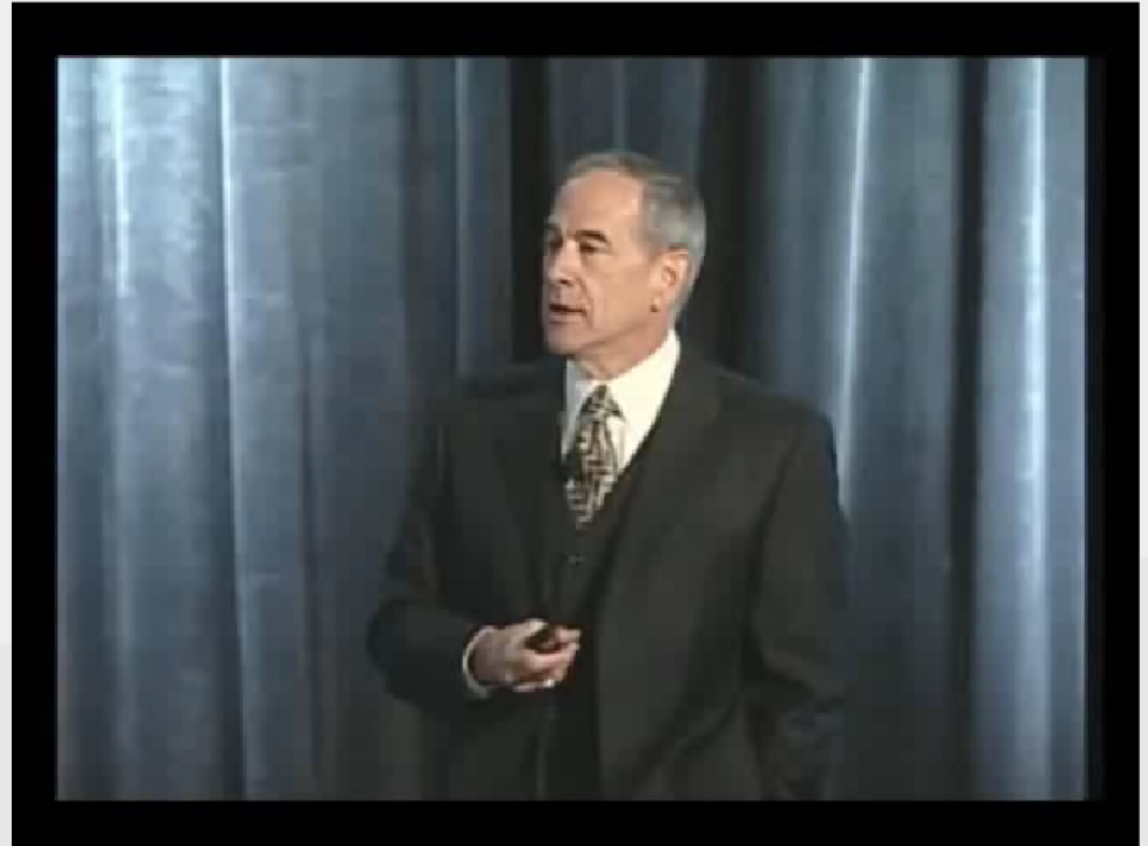
Karl Laroche... Vanier College

Claudia Farnesi... Dawson College

Math and Science Collaboration Initiative (MASCI)

Richard Dufour

On individual
teachers and
traditional
approaches
to schools:



Professional Learning Communities (PLC)

Professional Learning Communities (PLC)

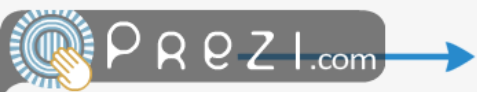
Dufour, 1998

DuFour, R., & Eaker, R. (1998). Professional learning communities at work: Best practices for enhancing student achievement. Bloomington, IN: National Educational Service.

Hord, 1997

Hord, S.M. (1997). Professional Learning Communities: Communities of Continuous Inquiry and Improvement. Washington DC: Office of Educational Research and Improvement.

PLCs are shared



PLCs aim to promote:

- Best instructional practices
- Meaningful assessment
- Alignment

Do this by fostering:

Isolated teachers → Supportive system

The pillars of PLCs are shared

- mission
- vision
- values
- goals

PLCs aim to promote:

- Best instructional practices
- Meaningful assessment
- Alignment

Do this by fostering:

- Collective inquiry
- Collaboration
- Leadership

Isolated teachers



Supportive system

Most implementation in grade schools



Most implementation in grade schools



Bolam, R., McMahon, A., Stoll, L., Thomas, S., Wallace, M., Greenwood, A., Hawkey, K., Ingram, M., Atkinson, A. & Smith, M. (2010). *Creating and sustaining effective professional learning communities*. Research Report 637. London: DfES and University of Bristol.

Cranston, J. (2009). *Holding the reins of the professional learning community: Eight themes from research on principal's perceptions of professional learning communities*. *Canadian Journal of Educational Administration and Policy*, 90, 1-22.

DuFour, R., DuFour, R., & Eaker, D. (2006). *Professional learning communities at work: New solutions for old problems*. Bloomington, IN: Solution Tree.

Hargreaves, A. & Fink, D. (2003). *Professional capital: The new currency of schools*. *Phi Delta Kappan*, 84(9), 693-700.

Hargreaves, A. & Fink, D. (2007). *The seven principles of sustainable leadership*. *Educational Leadership* 61(7), 8-13.

Harris, A., Day, C., & Hadfield, M. (2010). *Teachers' perspectives on effective school leadership*. *Teachers and Teaching*, 9(1), 67-77.

Hopkins, D. (2011). *School improvement for real*. London, England: RoutledgeFalmer

Hord, S., Meehan, M., Orletsky, S., & Sattes, B. (1999). *Assessing a school staff as a community of professional learners*. *Issues in Educational Research*, 7(1), 1-10.



awla

Lakshadweep Sea

Indian Ocean

Statos

N O T

This session is not about the implementation of institutional PLCs at the college level.

We're thinking about the
system on a larger
scale...

PLCs across CÉGEPs:

- Within disciplines (more on this later)
- Across disciplines

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"Communities":

- Local collaboration committees which bring teachers from local high schools, regional CÉGEPs, area universities, and even industry together.
- Discuss alignment at each level; methods and modules which can be adapted and applied at each level to streamline curriculum; and meaningful assessments which prepare students for each successive challenge.
- Focus on results and and ideal outcomes: ensuring learning for all students.

Models of multi-level PLCs exist; mostly from UK and Australia

Beckett, 2011

Beckett, L. (2011). Professional learning in community: teachers and academic partners focused on disadvantaged students in schooling and higher education. *Australian Educational Research*, 38, 109-124.

Scott et al., 2011

Scott, A., Clarkson, P., & McDonough, A. (2011). Fostering Professional Learning Communities Beyond School Boundaries. *Australian Journal of Teacher Education*, 36:6, 5-16.

Preliminary indications suggest these PLCs have significant positive results on student learning

We just need to get started!

We just need to get started!



We need participants!

Examples

Intra-CÉGEP discipline-specific workshops

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Intra-CÉGEP discipline-specific workshops

Biology Workshop
Tues. June 7th

Alignment of Learning Outcomes

General Biology 1 (101-NYA) Alignment Grid

	Objective/Topic								
Introductory Material	Explain the study of Biology and its relevance in our daily lives.	x	x	x	x	x	x	x	x
	Explain the characteristics that distinguish living organisms from non-living objects.	x	x	x	x	x	x	x	x
	Recognize different levels of organization (from atoms to ecosystems).	x	x	x	x	x	x	x	x
Biological Chemistry	State the seven major Themes of Biology.	x	x	x	x	x	x	x	x
	Outline the scientific and experimental methods and approaches used by scientists to solve scientific problems.	x	x	x	x	x	x	x	x
	Understand the significance of the physical and chemical properties of water to life.	x	x	x	x	x	x	x	x
Cells	Describe the chemical structure of the various macromolecules, (carbohydrates, lipids, proteins, nucleic acids, ATP) and the biological function of each.	x	x	x	x	x	x	x	x
	Understand current theories on the origin of life.	x	x	x	x	x	x	x	x
	Explain the theoretical steps in the evolution of living cells, and the supporting evidence.	x	x	x	x	x	x	x	x
Cell Cycle / Division	Understand the physical principles on which the light and electron microscopes are based.	x	x	x	x	x	x	x	x
	State the cell theory and explain the history of how Schwann and Schleiden came to propose it.	x	x	x	x	x	x	x	x
	Explain why the theory of spontaneous generation was so compelling and how Louis Pasteur disproved it.	x	x	x	x	x	x	x	x
	Define a virus and explain why they may or may not be considered to be alive.	x	x	x	x	x	x	x	x
	Compare and contrast prokaryotic and eukaryotic cells.	x	x	x	x	x	x	x	x
	Name and state a major function of, and describe or draw the structure of, the major organelles of eukaryotic cells.	x	x	x	x	x	x	x	x
	Describe the structure of the cell membrane.	x	x	x	x	x	x	x	x
	Explain the ways in which molecules can enter or leave cells through the cell membrane.	x	x	x	x	x	x	x	x
	Describe the types of cell junctions, and the functional role of each.	x	x	x	x	x	x	x	x
	Outline how the structural characteristics of plant and animal tissues relate to their function.	x	x	x	x	x	x	x	x
Cell Cycle / Division	Recount the discovery of how chromosomes carried genes.	x	x	x	x	x	x	x	x
	Analyze, with a labelled diagram, the process of mitosis.	x	x	x	x	x	x	x	x
	Describe how Sutton's chromosome theory of inheritance provides the physical explanation for Mendelian inheritance.	x	x	x	x	x	x	x	x
	Analyze, with a labelled diagram, the process of meiosis.	x	x	x	x	x	x	x	x
	Compare and contrast the processes of mitosis and meiosis.	x	x	x	x	x	x	x	x
	Outline the cell cycle and the role of mitosis in it.	x	x	x	x	x	x	x	x
	Explain the importance of meiosis in propagating genetic variation.	x	x	x	x	x	x	x	x
	Discuss how the cell cycle is regulated.	x	x	x	x	x	x	x	x
	Discuss the specific role of chromosomes in inheritance.	x	x	x	x	x	x	x	x
	Explain how the chemical nature of the gene was discovered.	x	x	x	x	x	x	x	x
Cell Cycle / Division	State the four rules that genetic material must be able to perform in cells.	x	x	x	x	x	x	x	x
	Describe the structure of DNA and explain how the structure allows for information coding, replication of genes, and regulation of cell function.	x	x	x	x	x	x	x	x
	Explain the process of DNA replication.	x	x	x	x	x	x	x	x
	Explain how the information stored in DNA is expressed in cells through transcription and translation.	x	x	x	x	x	x	x	x
	Describe the basic structure of RNA.	x	x	x	x	x	x	x	x
	Explain the structure and function of three types of RNA.	x	x	x	x	x	x	x	x
	Explain the process of protein synthesis in cells.	x	x	x	x	x	x	x	x
	Explain the method of genetic coding in the structure of DNA and use the genetic dictionary to specify the amino acid sequences of a polypeptide.	x	x	x	x	x	x	x	x
	Contrast how prokaryotes and eukaryotes regulate gene expression in their cells.	x	x	x	x	x	x	x	x

Participants committed to return

ignment of Learning Outcor


General Biology 1 (101-NYA) Alignment Grid

	Objective/Topic							
Introductory Material	Explain the study of Biology and its relevance in our daily lives	x	x	x	x	x	x	x
	Expalin the characteristics that distinguish living organisms from inanimate objects	x	x	x	x	x	x	x
	Recognize different levels of organization (from atom to ecosystem).	x	x	x	x	x	x	x
	State the seven major Theories of Biology		x	x				x
	Outline the scientific and experimental methods and approaches used by scientists to solve scientific problems	x	x	x	x	x	x	x
Biological Chemistry	Understand the significance of the physical and chemical properties of water to life	x				x	x	x
	Describe the chemical structure of the various macro-molecules; (carbohydrates, lipids, proteins, nucleic acids, ATP) and the biological function of each	x		x		x	x	x
	Understand current theories on the origin of life.	x		x	x	x	x	x
	Explain the theoretical steps in the evolution of living cells, and the supporting evidence	x		x	x	x	x	x
Cells	Understand the physical principles on which the light and electron microscopes are based		x		x		x	x
	State the cell theory and explain the history of how Schwann and Schleiden came to propose it	x	x	x	x		x	x
	Explain why the theory of spontaneous generation was so compelling and how Louis Pasteur disproved it		x					x
	Define a virus and explain why they may or may not be considered to be alive	x	x	x	x	x	x	x
	Compare and contrast prokaryotic and eukaryotic cells	x	x	x	x	x	x	x
	Name and state a major function of, and describe or draw the structure of, the major organelles of eukaryotic cells	x	x	x	x	x	x	x
	Describe the structure of the cell membrane	x	x	x	x	x	x	x
	Explain the ways in which materials can enter or leave cells through the cell membrane		x			x	x	x
	Describe the types of cell junction, and the functional role of each		x	x		x		x
	Outline how the structural characteristics of plant and animal tissues relate to their function.	x		x		x	x	
Cell Cycle / Division	Recount the discovery of how chromosomes carried genes	x	x	x	x	x	x	x
	Analyze, with a labelled diagram, the process of mitosis	x	x	x	x	x	x	x
	Describe how Sutton’s chromosomal theory of inheritance provides the physical explanation for Mendelian inheritance	x	x		x	x	x	x
	Analyze, with a labelled diagram, the process of meiosis	x	x	x	x	x	x	x
	Compare and contrast the processes of mitosis and meiosis	x	x	x	x	x		x
	Outline the cell cycle and the role of mitosis in it	x	x	x	x	x	x	x
	Explain the importance of meiosis in propagating genetic variation.	x	x	x	x	x	x	x
	Discuss how the cell cycle is regulated	x	x	x	x	x	x	x
	Discuss the specific roles of chromosomes in inheritance	x	x	x	x	x	x	x
	Explain how the chemical nature of the gene was discovered		x			x	x	x
State the four roles that genetic material must be able to perform in cells	x	x	x		x	x	x	

Cell Cycle / Division	Recount the discovery of how chromosomes carried genes	X	X	X	X	X	X	X
	Analyze, with a labelled diagram, the process of mitosis	X	X	X	X	X	X	X
	Describe how Sutton's chromosomal theory of inheritance provides the physical explanation for Mendelian inheritance	X	X		X	X	X	X
	Analyze, with a labelled diagram, the process of meiosis	X	X	X	X	X	X	X
	Compare and contrast the processes of mitosis and meiosis	X	X	X	X	X		X
	Outline the cell cycle and the role of mitosis in it	X	X	X	X	X	X	X
	Explain the importance of meiosis in propagating genetic variation.	X	X	X	X	X	X	X
	Discuss how the cell cycle is regulated	X	X	X	X	X	X	X
Genes	Discuss the specific roles of chromosomes in inheritance	X	X	X	X	X	X	X
	Explain how the chemical nature of the gene was discovered		X			X	X	X
	State the four roles that genetic material must be able to perform in cells	X	X	X		X	X	X
	Describe the structure of DNA and explain how the structure allows for information coding, replication of genes, and regulation of cell function	X	X	X	X	X	X	X
	Explain the process of DNA replication		X		X	X	X	
	Explain how the information stored in DNA is expressed in cells through transcription and translation	X	X	X	X	X	X	X
	Describe the basic structure of RNA	X	X	X	X	X	X	X
	Explain the structure and function of three types of RNA		X	X	X		X	X
	Explain and diagram the process of protein synthesis in cells	X	X	X	X	X	X	
	Discuss the method of genetic coding in the structure of DNA and use the genetic dictionary to specify the amino acid sequence of a polypeptide	X	X	X	X	X	X	
	Contrast how prokaryotes and eukaryotes regulate gene expression in their cells		X				X	
	Differentiate between chromosomal and gene mutations and their effects on cells and organisms	X	X	X		X	X	X
	Describe the origin and nature of chromosomal aberrations.	X	X	X			X	X
	Differentiate between germ cell and somatic cell mutations.	X	X	X	X		X	X
	Identify possible causes of mutations.	X	X	X	X	X	X	X
	Recognize mutation as a source of variation.	X	X	X	X	X	X	X
	Relate an example of chromosomal and gene mutation to a known phenotypic effect or syndrome on humans	X	X	X	X	X	X	X
	Describe the factors important in maintaining genetic variation.	X	X	X	X	X	X	X
	Diagram and briefly describe the central dogma of molecular biology	X	X	X	X	X	X	X
	Discuss the tools and gene manipulation techniques available to biologists today		X			X	X	
Bacterial Plasmids and Gene Cloning		X				X		
Restriction Fragment Analysis and DNA Fingerprinting		X				X		
Biotechnology		X				X		
Cytogenetics		X					X	
Discuss the aims, methods, and implications of the Human Genome Project		X				X		

Participants committed to return to their departments and narrow down "essential 75%"

Next meeting the group will produce a document of minimum learning outcomes for all



Lab module/activity
monitoring
St. Lawrence River

English CÉC



Lab module/activity monitoring St. Lawrence River

English CÉGEPs across Québec
collecting data on water quality,
biodiversity, etc., from various
points along St. Lawrence river.





VANIER
COLLEGE

Champlain
COLLEGE



DAWSON
COLLEGE

Learn the names of the
South-Western States

CÉGEP students would collect data for
University research/Environment Canada;
A high school module would introduce
students to the concepts at play in this lab

HS -

CÉGEP students would collect data for
University research/Environment Canada;
A high school module would introduce
students to the concepts at play in this lab

HS - CÉGEP - University - Industry
would necessarily work together

Students would develop and reinforce
links of understanding at each level

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