

Track: Leadership and Analytics

Applying Text Analytics for Strategic Insights in Higher Education

Bluenotes GLOBAL 2020 Virtual Experience

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Mike Rivard

Business Process Analyst
Strategy and Business Development

Rob Downie

Manager, Institutional Research
Strategy and Business Development

□ Agenda for today

About Fanshawe

Tools of our trade

Why we do Text Analytics

Examples

1. Setting Planning Priorities
2. Prospective Student Engagement
3. Policy Analysis

Summary – Questions – Discussion

□ About Fanshawe College

Large comprehensive college in London, Ontario Canada

4 city campuses - 3 regional campuses - 2 micro campuses

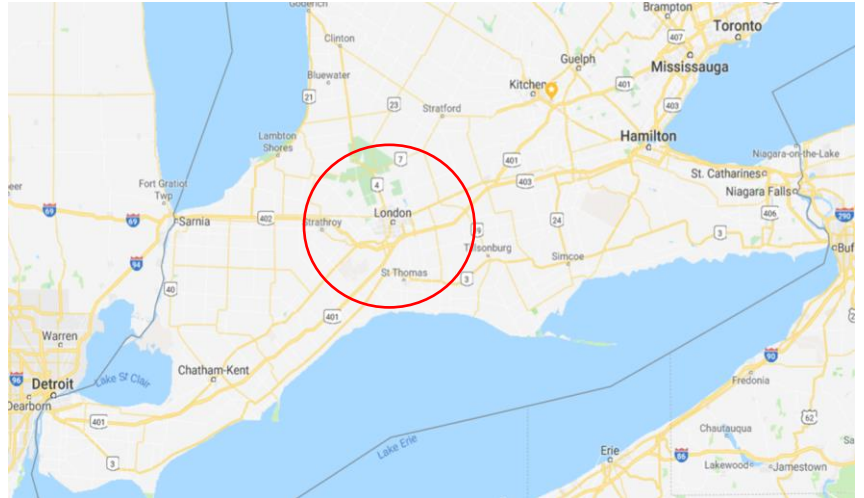
240 programs in 2019

17, 500 FT PS enrolments confirmed

38% international students
from over 60 countries

5% Indigenous

> 4,500 staff (1/3 FT and 2/3 PT)



☐ Tools of our Trade

Explorance

Blue 7 10

Surveys in 6 languages

Data Sync tool

Data Integrity Gateway

LMS-Blue integration underway

Provalis

QDA Miner 5

Mixed methods data analysis

Wordstat 8

Content analysis; text mining

□ WHY think **discovery**

High-level ... concept over precision

Revealing ... illustrates clusters and synergies

Evaluative ... able to do Trend Analysis

Insightful ... encourages better questions

Qualitative ... tells a story of differentiation

... a value add complement to traditional quantitative methods

4 Slides to illustrate the need

.... So many points of view, so many ways to express them

TOTAL ENROLMENT; SECTOR AVERAGE

STUDENT_POPULATION STRATEGY SKILLS SKILLED TRADES; ADMINISTRATION RETENTION; GRADUATION TOP TECHNOLOGY TEACHING_AND_LEARNING

RELATED FIELD; EMPLOYMENT **QUALITY; ENSURE** PUBLIC SAFETY PROGRAM_OFFERINGS **PATHWAYS** Others
ONLINE LEARNING NURSING NATURAL SCIENCES LEARNER; COMMITTED LABOUR MARKET

INSTITUTION

JOBS_INNOVATION_AND_ECONOMIC_DEVELOPMENT INFRASTRUCTURE; EXISTING

INDUSTRY; LOCAL HEALTH GRADUATE CERTIFICATE; DEGREES GLOBAL FRANCOPHONE FACULTY

EXPERIENTIAL; LEARNING OPPORTUNITIES ECONOMIC DEVELOPMENT DIVERSE; POPULATION

DIGITAL; DESIGN **DIFFERENTIATION, MINISTRY'S LONG-TERM, PLANS, STRATEGY**

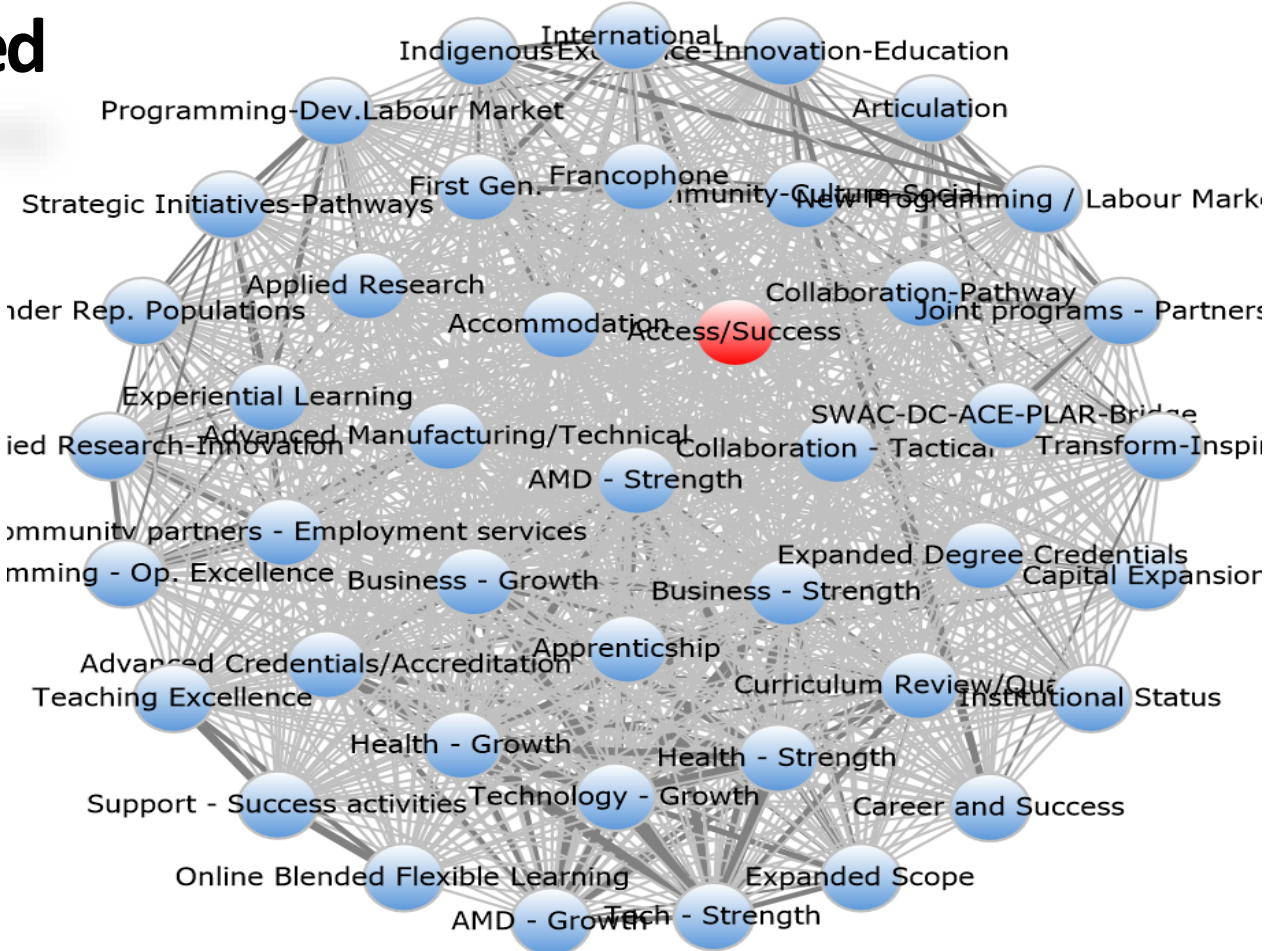
DELIVERY METHODS; OFFERS CULINARY; HOSPITALITY COUNCIL; CANADA

ARTICULATION; AGREEMENTS APPLIED RESEARCH ADVANCED MANUFACTURING ACCOMODATION **ACCESS**

ABORIGINAL

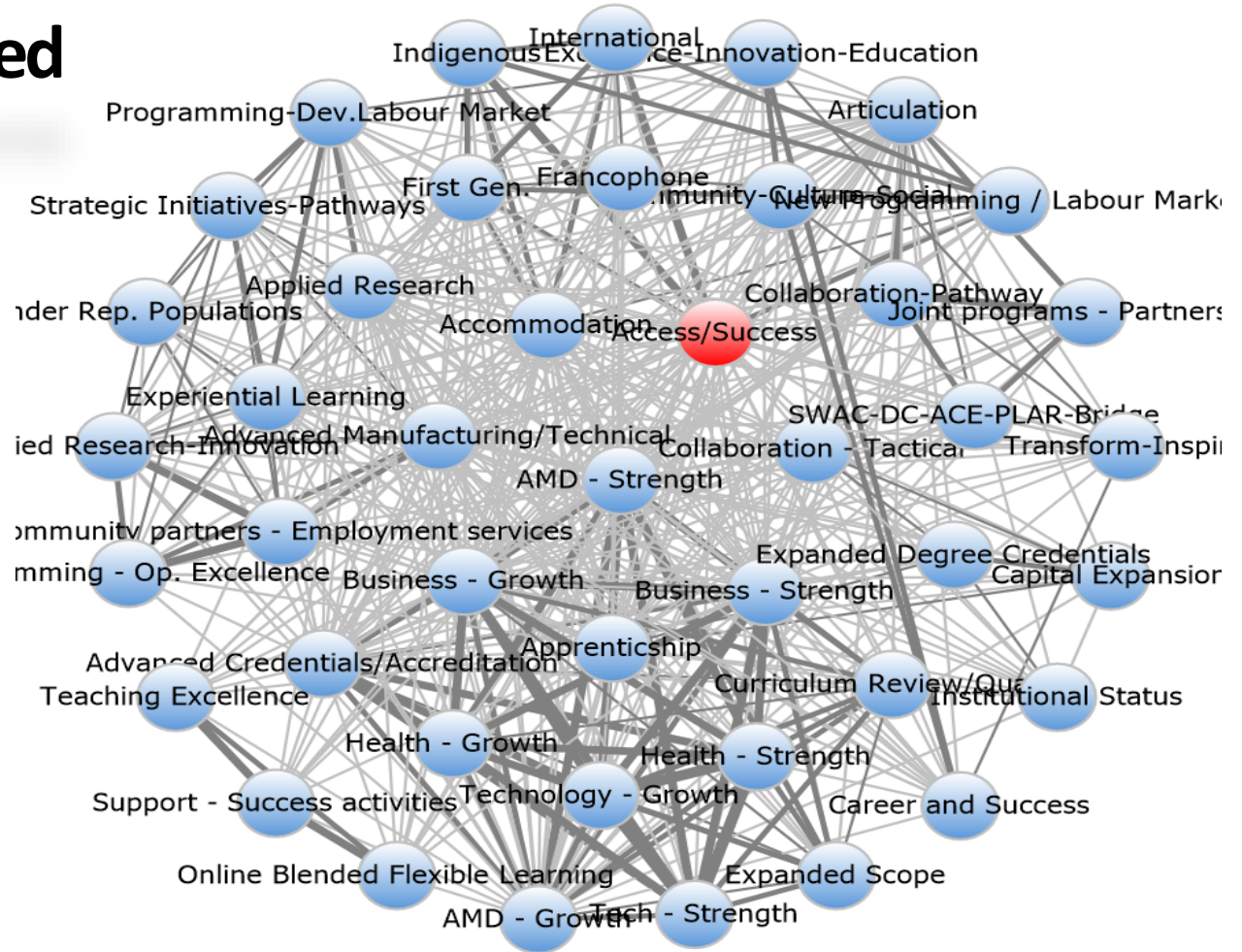
Illustrating the need

... all things relate
in some way



Illustrating the need

... use text analytics
to peel away
the noise



❑ **Common applications**

Spam filtering

NSA US national security

Brand management - sentiment analysis

Common in modern Academic research

❑ Possible research questions

Differentiation – what and what not, who?

Competitive landscape - provide clarity?

Alignment & opportunities for collaboration?

Competitive or emerging risk?

□ Process Followed

- Identify data and key variables to answer the research questions
- Build a clean corpus (collection of comments, articles, pdf. etc.)
- High level pass to see topics, key phrases and key words
- Often this is QED ... ?
- Drill deeper by coding the document into category and codes
 - highly efficient keyword and cluster extraction methods
- Check to ensure sufficient “coverage” of texts
- Further analyze the results ... answer the question

Example 1: **Setting planning priorities**

Thematic analysis of
feedback collected
during a
comprehensive community
survey

❑ A business need for Text Analysis:

- IR dept. also does community service and consulting.
- Part of a city strategic planning/priorities renewal process
- Leadership was seeking a deeper understanding of issues
- Community survey using Explorance Blue
- received Unstructured text from 800+ respondents

☐ Key words found:



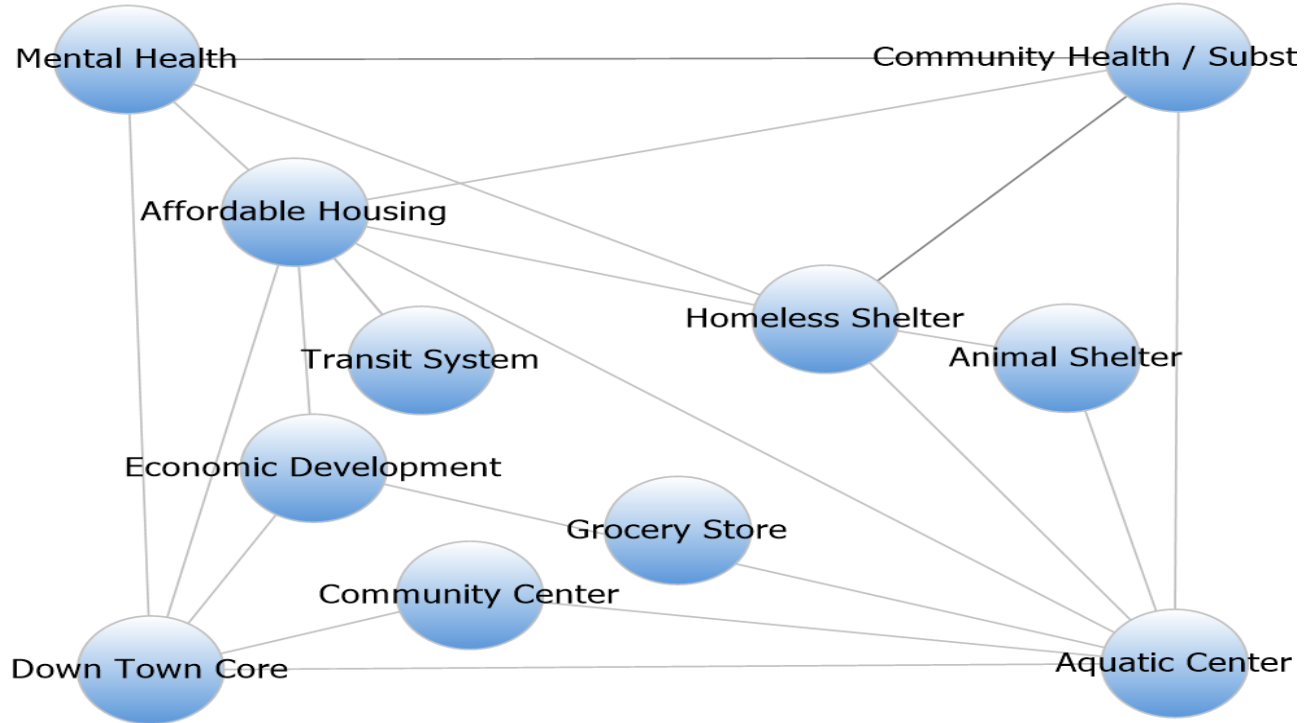
Key Topics:



Reveals: clustering, agglomeration, priorities, statistical significance
Used to validate the city strategic planning and priorities.

Relationships (Bubble chart):

.. Another way to visualize the same data



Example 2: Prospective student engagement

Thematic Analysis
of student comments
from College enrolment website

❑ How to better connect with prospective students

- By contributing to better website design
- By Identifying the most important FAQs
- unstructured question from 33,000 respondents

☐ Challenges

Language used can vary greatly:

Students don't speak with the precision of an administrator.

e.g. Cost – Price – Tuition – Fees, Monthlies, remittances, amounts owing etc.

Spelling:

- How many ways can you spell College? .. Apparently 21!

Bias:

*- customer was deeply committed to prior work;
needed to reconcile new results with old study.*

33,000 Inquiries

Audience

	Count
International Student	15,829
Adult Learner	11,814
Current Student	1,682
High School Student or Recent Graduate	3,232
Parent/Supporter	1,807



- International Student
- Adult Learner
- Current Student
- High School Student or Recent Graduate
- Parent/Supporter

☐ Responses by products offered

<u>Product</u>	<u>Cases</u>	<u>% Cases</u>
FT programs	24,644	73%
CE	3,599	11%
PT studies	2,611	8%
Grad Studies	1,919	6%
Apprenticeship	674	2%
Degree Program	546	2%
ACE-GED	276	1%
CTS	247	1%



☐ Top 10 Questions (2019 vs 2016)

2019 Top 10, from 33,000 responses	2016 Top 10 (by Jhea), from 1000 responses
What are the Fees?	
I want to Proceed-Apply-Register? HOW?	4. How do I apply to Fanshawe?
What is the Tuition - Cost - Price?	
I want more Information (generic)	
Is this offered Online?	1. What online courses do you provide?
What are the requirements or prerequisites for acceptance?	7. What are the requirements for your program?
I have questions about IELTS, TOEFL, Study VISA and ESL.	
Do I qualify - have the credentials - Am I eligible?	8. What GPA do I need to get accepted into your program?
Is this Course Available?	
I want to Speak to-Come In-be contacted	

Key questions by Product

	Degree Program	Grad Studies	CE	Apprenticeship	PT studies
1	I want to Proceed-Apply-Register? HOW?	Do I qualify - have the credentials - Am I eligible?	Is this offered Online?	I want more Information (generic)	Is this offered Online?
2	Do I qualify - have the credentials - Am I eligible?	What are the Fees?	Is this Course Available?	I want to Proceed-Apply-Register? HOW?	What is the Tuition - Cost - Price?
3	What are the requirements or prerequisites for acceptance?	I have questions about IELTS, TOEFL, Study VISA and ESL.	I want more Information (generic)	What is the Tuition - Cost - Price?	I want more Information (generic)
4	I want more Information (generic)	I want to Proceed-Apply-Register? HOW?	I want to Proceed-Apply-Register? HOW?	What are the requirements or prerequisites for acceptance?	I want to Proceed-Apply-Register? HOW?
5	I want to know if this program is suitable for me - Concerns	What are the requirements or prerequisites for acceptance?	What is the Tuition - Cost - Price?	What are the Fees?	What are the Fees?

❑ Example 3: Policy analysis

Comparing College Strategies
using the SMA documents

What are SMAs?
Who's talking?



Assembled a corpus of 24 College SMAs (2014-2017)

❑ **Questions we will explore:**

What Topics are discussed ?

Are College SMAs similar ?

Deeper dive on “Teaching”

❑ Infer qualitative differences

Topics

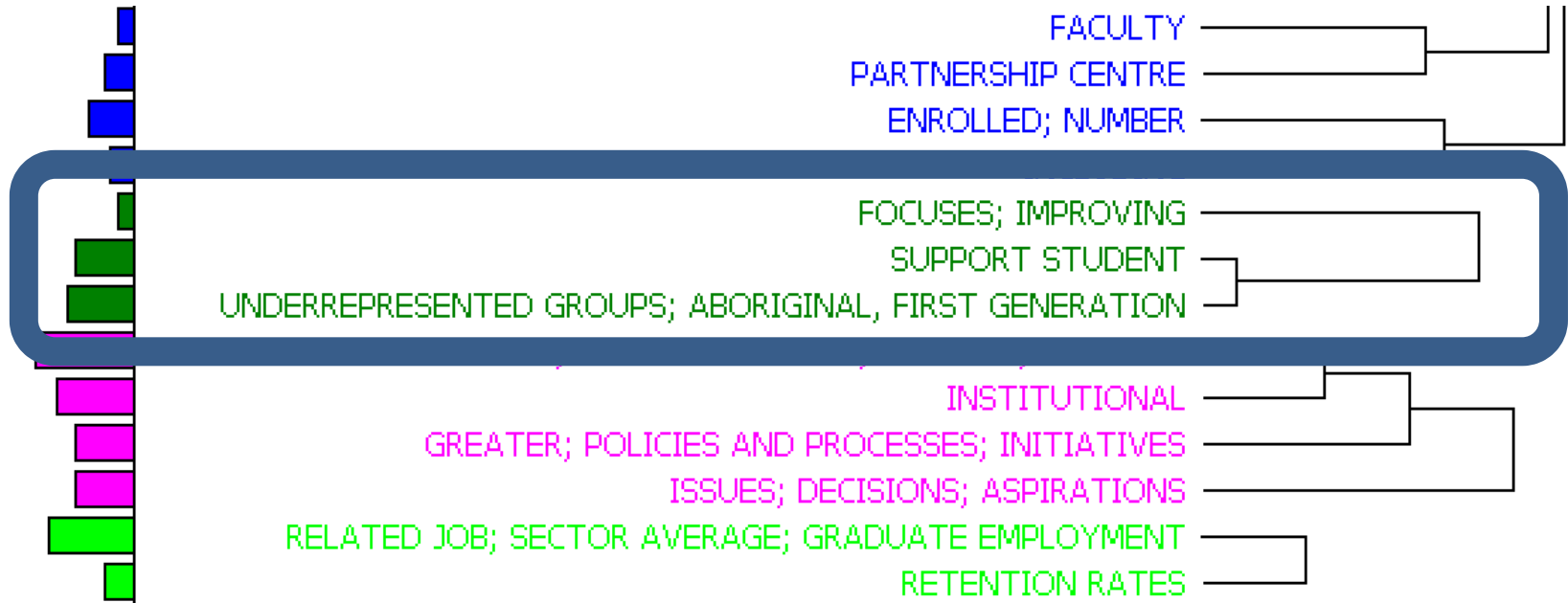
Priorities

Relationships

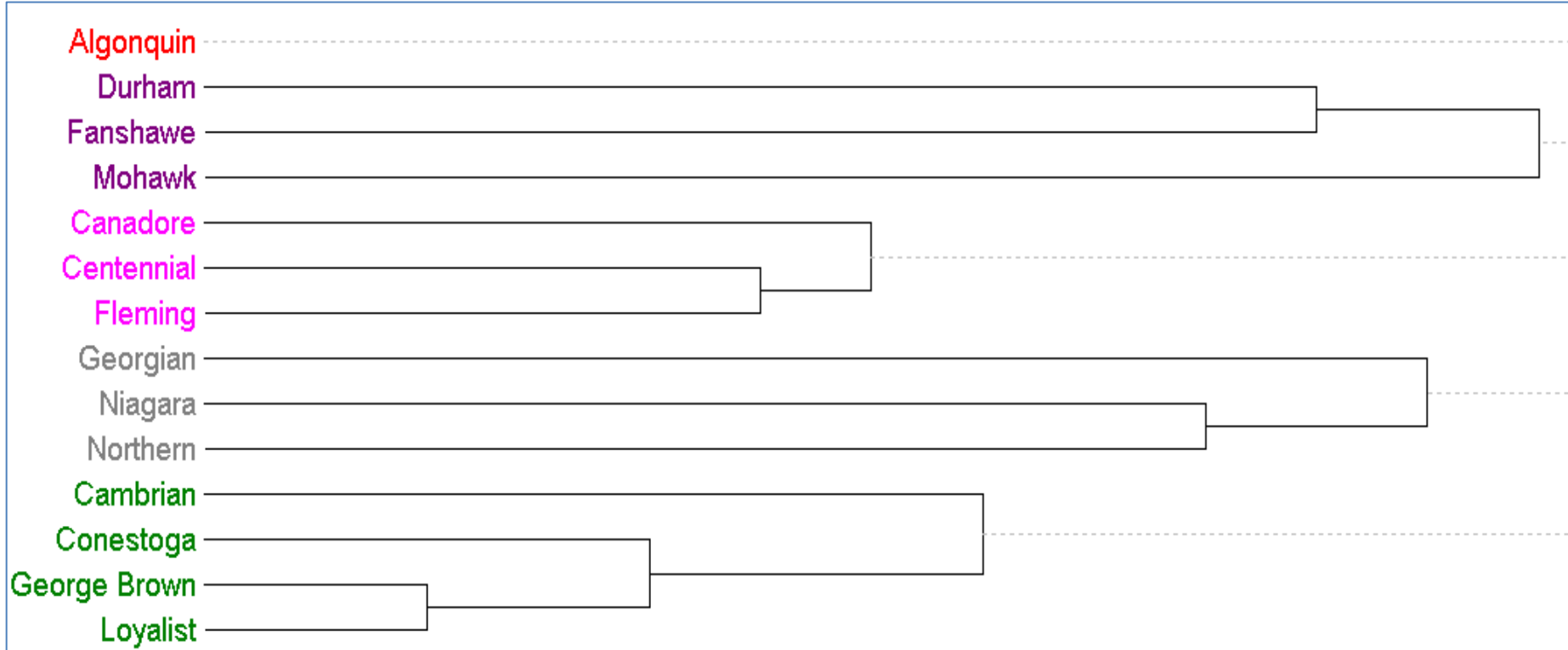
Shared similarities

☐ TOPICS

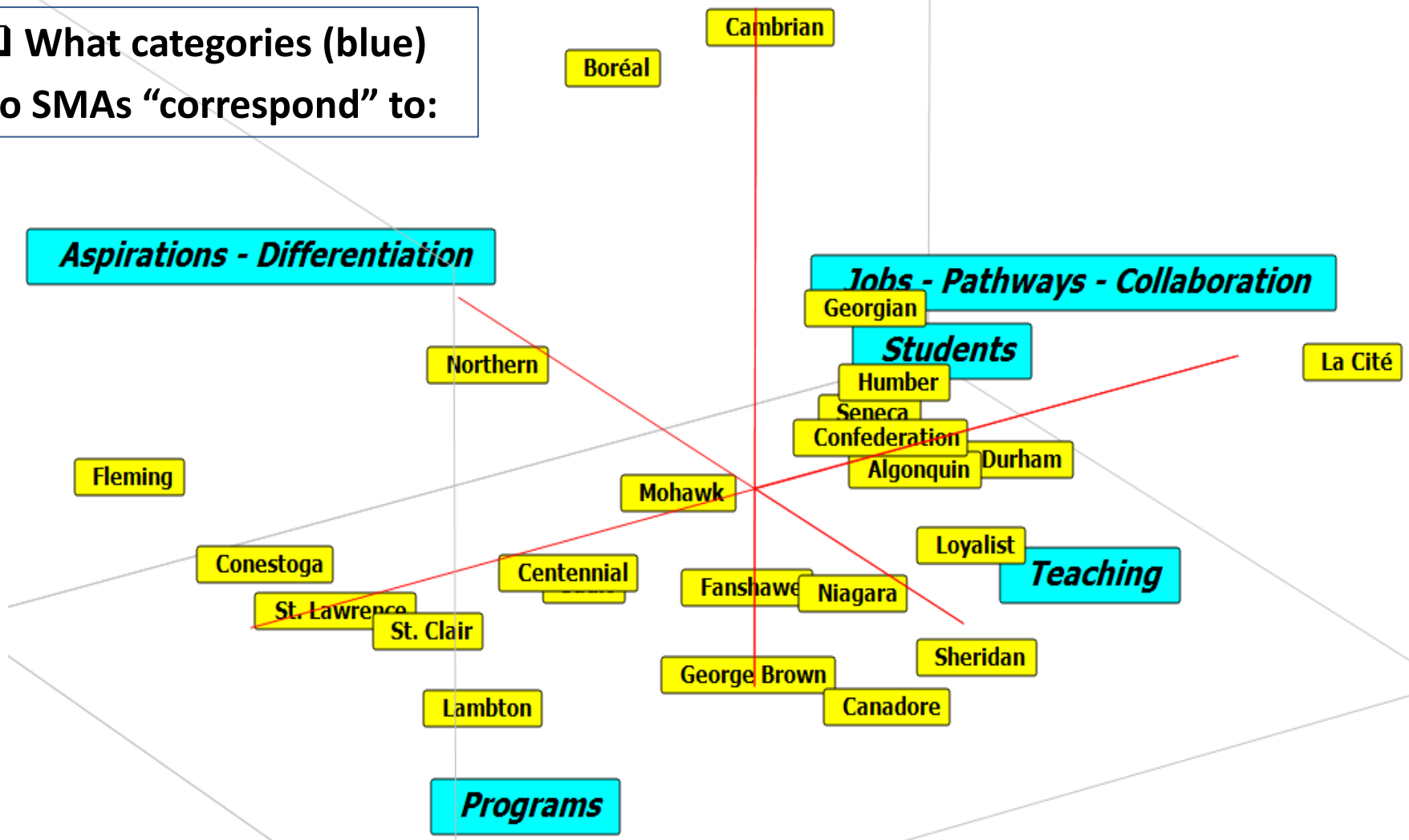
Agglomerate words into topics and categories



☐ RELATIONSHIPS : Are SMA's the same ?



❑ What categories (blue) do SMAs “correspond” to:



□ Deeper dive – TEACHING

Ministry direction: Looking for methods that expand learning options for students and improve their learning experience and career preparedness.

experiential

entrepreneurial

work-integrated

online learning

☐ SMA Content

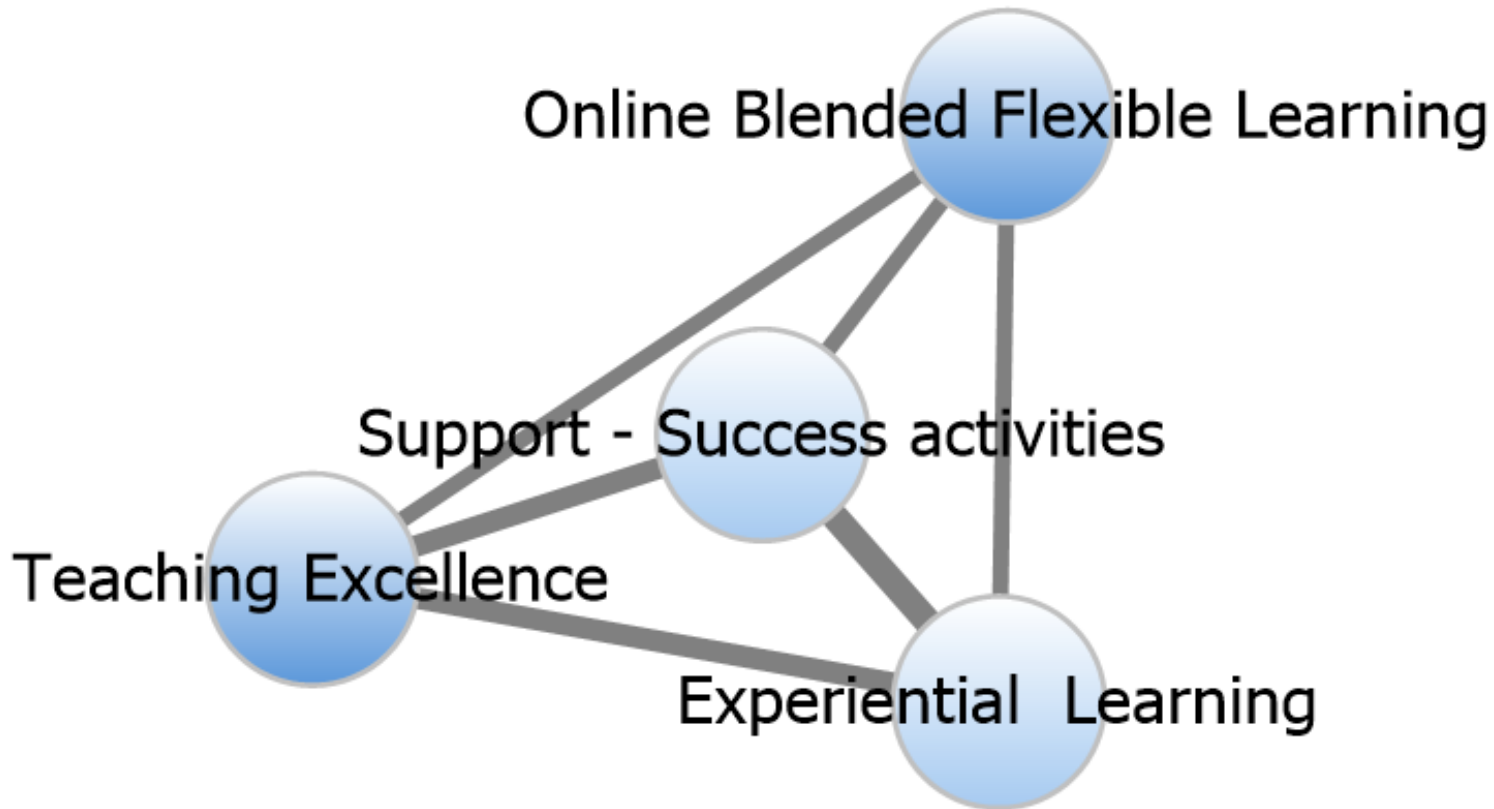
Actual Word Groups for TEACHING



Teaching

- **Experiential Learning**
- **Support - Success activities**
- **Teaching Excellence**
- **Online Blended Flexible Learning**

☐ Teaching co-occurrence of topics



❑ Compare this to a recent job posting ...

**Associate Vice President, Learning
Innovation, Teaching Excellence and
Academic Quality**

Centennial College, Toronto, ON *

- " *Today's Top Ten in Higher Ed*, Academica Group,
- www.academica.ca/, 18 Sept. 2017.

□ Conclusion / Summary comments

- **thematic not precise**, qualitative/mixed methods
- **Direction finding** and prioritization of topics
- **Trend and evaluation**
- **Sentiment analysis**

□ Conclusion / Summary comments

- Powerful **compliment** to conventional survey methods
- Leads to **better questions** (... always an 'ah-ha' moment)
- Avoids **bias** that might exist in a conventional survey
- *“In the voice of the customer”*, and not the survey author

□ KEY TAKEAWAYS

- a. Solid potential for system-level evaluation
- b. Multiple dimensions of differentiation
- c. Informative or directive influence possible
- d. Also capable of :
 1. Building custom dictionaries to automatically classify new documents (AI-machine learning)
 2. Monitoring social media based on keywords , hashtags or url.

Questions and Discussion