Putting Students at the Centre of Our Work:

Using data and evidence to drive change in higher education

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Founded in 1818

Medical-Doctoral Research University (member of U15 group of universities)

19,000+ students (~15,000 undergrad)

~1100 full-time + ~300 part-time academic staff

13 faculties and 180+ degree programs

Are our campuses effectively creating a dynamic and innovative learning environment for our students?

"(Students) deserve the best learning environment that we can provide, given the limits of our human imaginations and our resources. Every one of our students deserves nothing less." (Toope, 2006)

Are the interventions we make at the course, program or institutional level having the impact that we intend to improve learning?

"The first and greatest impediment to change, however – and the one over which we have the most control – is our own habit of intellectual self-limitation: of conceiving the future always in terms of the past, and the possible in terms of the proven." (Zundel and Deane, 2010)

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What other interventions might we undertake that would improve the learning experiences for our campus communities?

"Our challenge is no longer simply to ascertain what it is we need to do; our challenge is to do it, to create and sustain excellent undergraduate education for all of our students." (Felten et al, 2016)

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1. Students as Partners in Understanding Our Teaching and Learning Environments

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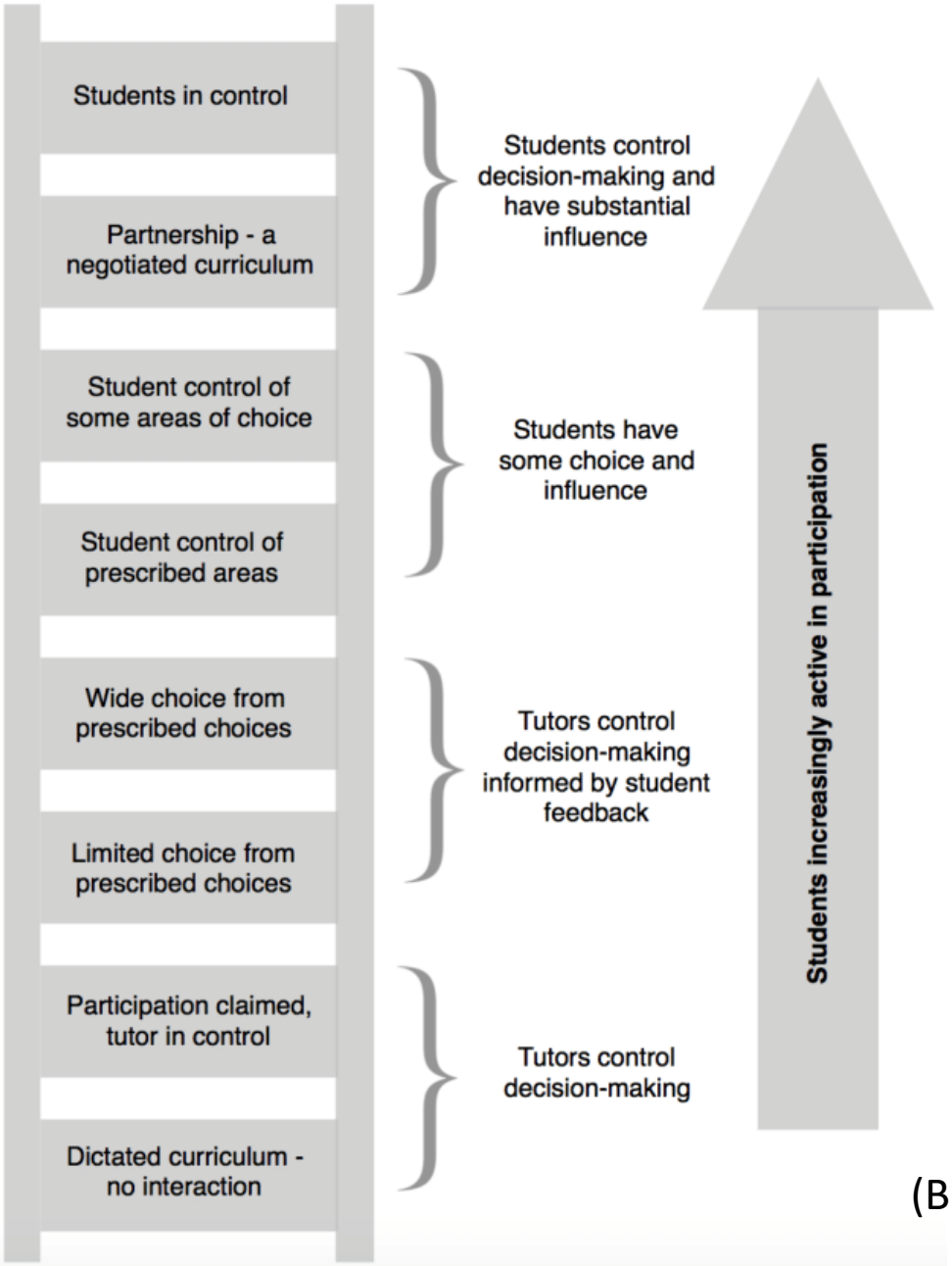
Why Students' Voices?

Importance of the student voice in understanding higher education teaching and learning:

- Key stakeholder
- Key perspectives

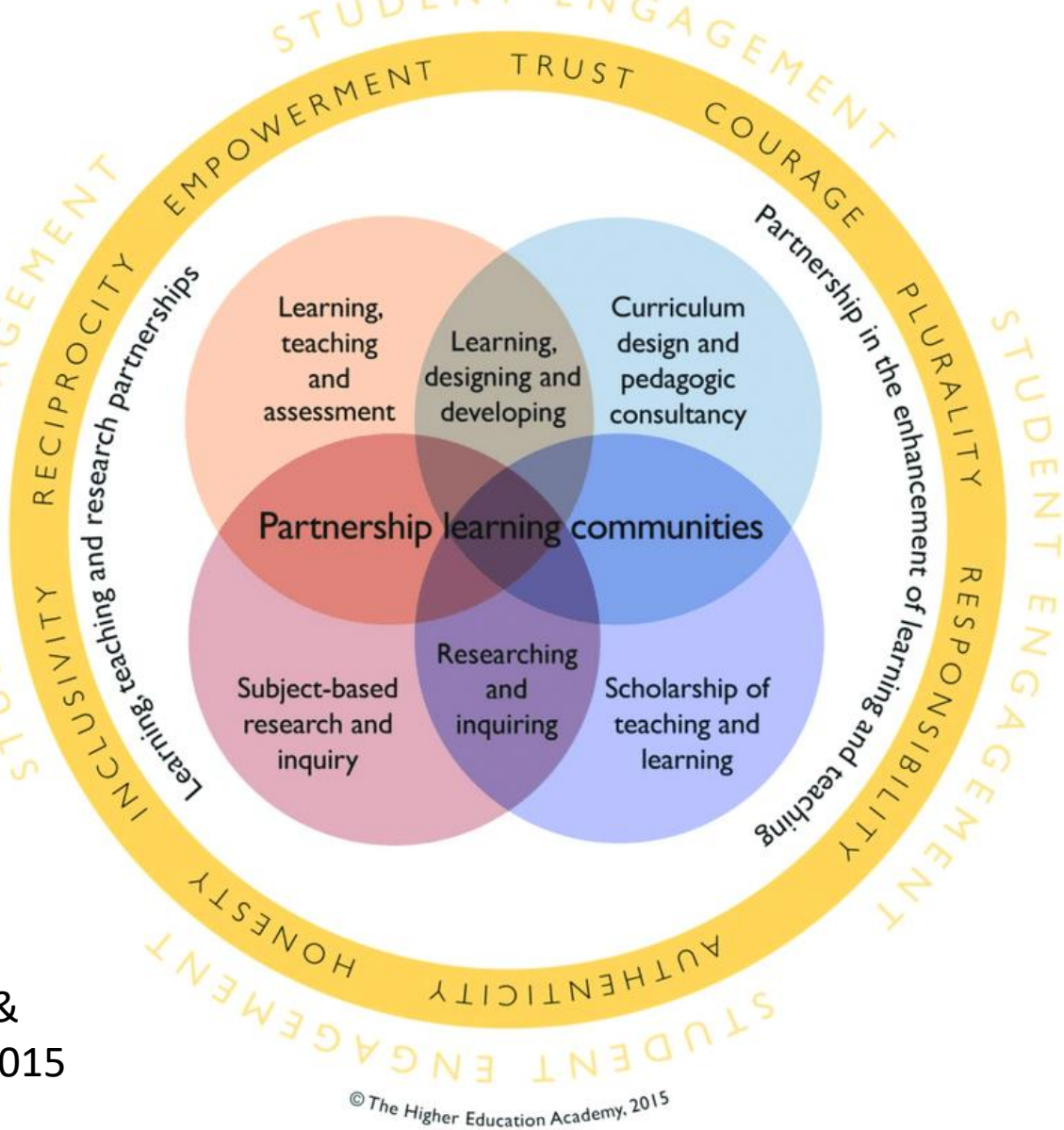
"Perhaps the key to unlocking innovative, successful problem-solving in higher education is something else entirely: student voice." (MacCracken, 2018)

Ladder of Student Participation



(Bovill & Bulley, 2011)

Students as Partners



Healey, Flint & Harrington, 2015

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Student as partners through student evaluations

In order for students to be partners in the evaluation of teaching and learning, we must ensure:

1. Students are given a voice
2. Students are supported in using their voice productively and meaningfully **
3. Their voice is taken seriously as part of the evaluation of teaching and learning

Students should not be the only voice in evaluating teaching and learning!

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Student Feedback Literacy

"Student feedback literacy denotes the understandings, capacities and dispositions needed to make sense of information and use it to enhance work or learning strategies." (Carless and Boud, 2018)

- How students receive and incorporate feedback into their learning
- How students learn to provide meaningful feedback

2. Using Data and Evidence to Inform Change in Higher Education:

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Why data- or evidence-informed?

Importance of evidence-informed practice for:

- Design and delivery of courses and curriculum
- Assessment of student learning (inside/outside of classroom) and evaluation of teaching effectiveness

"While some college leaders are making serious efforts to improve the quality of teaching, many others seem content with their existing programs. Although they recognize the existence of problems affecting higher education as a whole, … few seem to believe that these difficulties exist on their own campus, or they tend to attribute most of the difficulty to the poor preparation of students before they enroll." (Bok, 2017)

Data and Academic Analytics

Academic analytics is being used to:

- Improve understanding of student experience (including for rankings)
- Improve administrative data for strategic enrolment management
- Provide personalized support, inform holistic advising and early alerts initiatives
- Guide and inform course and program design
- Improve quality and accuracy of student assessment & program evaluation

Academic Analytics in Higher Education

- Increased focus on retention and student success (Campbell, DeBlois, and Oblinger, 2007).
    - *what motivates institutions?*

Focus on desire for understanding, developing and sustaining a high quality education to help students towards their individual goals

Focus on practical realities that retention and student success impacts - rankings, reputation, recruitment, and revenues

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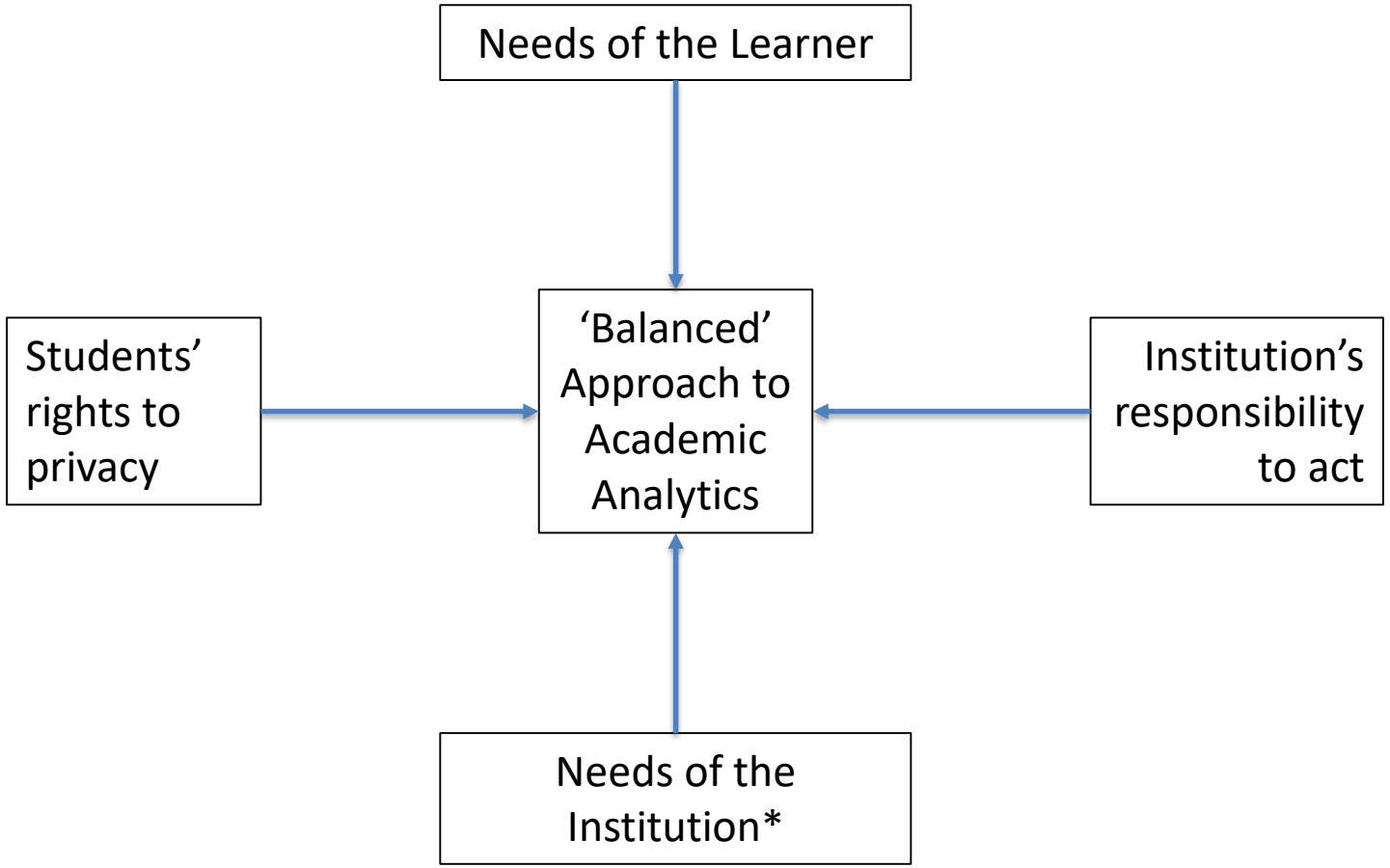
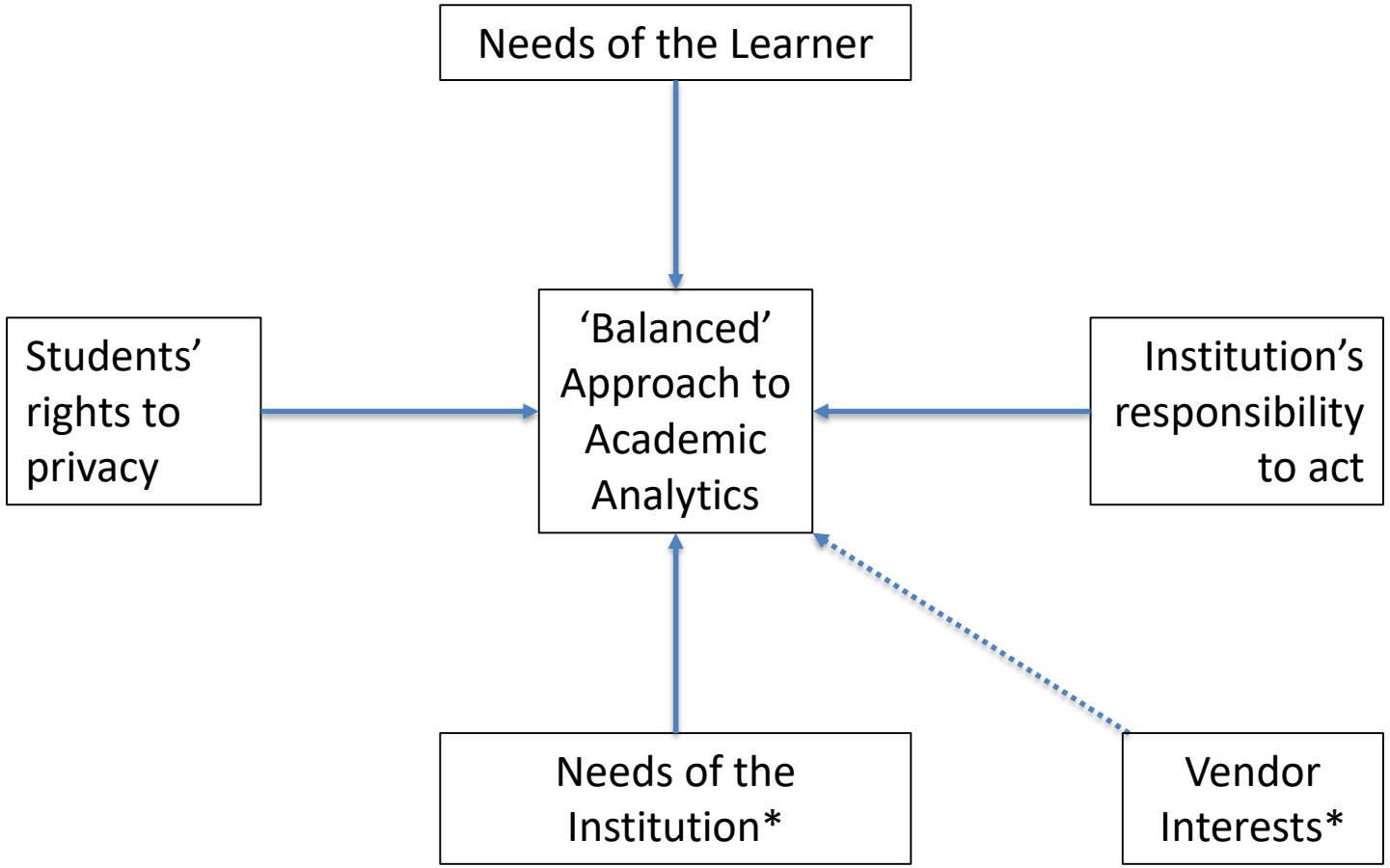
Faculty Perceptions of Academic Analytics

- Significant faculty skepticism and uncertainty about using such data to inform changes to teaching, learning, and curriculum practices (Andrade, 2011; Dykoff, 2011; Parry, 2012)
    - Uncertain about the motivation behind the initiative
    - Concerns about ethics and privacy
    - Data literacy
    - Complex to understand, and requires changes in faculty behaviour

Ethics and Academic Analytics



Ethics and Academic Analytics



Using Academic Analytics

Understanding the data about our students is only useful if we (instructors, academic programs, academic leaders) use that evidence to make better decisions about how we design learning experiences, and support student success

- Who should have access to the data?
- Under what conditions?

Academic Analytics – Required Steps

Data Governance

DATA ACCESS	THE POLICY FRAMEWORK AROUND ETHICAL ACCESS AND USE OF ANALYTICS DATA
DATA VERIFICATION	ENSURING APPROPRIATE DATA STANDARDS ARE IN PLACE ACROSS INSTITUTIONAL DATA SETS
DATA INTEGRATION	BRINGING TOGETHER DISPARATE INSTITUTIONAL DATA INTO COMMON DATA SET
DATA ANALYSIS	ANALYZING DATA APPROPRIATELY AND EFFECTIVELY (INCL. PREDICTIVE MODEL)
DATA SUPPORT	PROVIDING THE RIGHT SUPPORT FRAMEWORK FOR THE EFFECTIVE USE OF DATA

3. Using Analytics with Student Feedback to Improve Teaching and Learning

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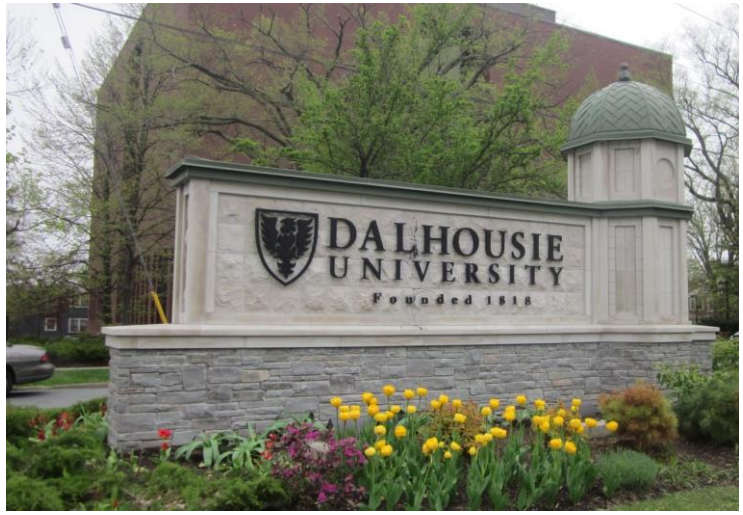
Dalhousie University

Student Evaluations on campus (average term)

Courses evaluated:
2300 course-instructor combinations

Invited:
~70,000 forms

Responses:
~30,000 completed



Understanding Our Data:

We explored four key questions focused on understanding our:

1. Core evaluation instrument
2. Student characteristics
3. Faculty and course characteristics
4. Retention and Student Success

Understanding Our Data:

Multinomial regression model to determine the impact of each question on the likelihood of the instructor receiving above 4.0 on the Overall question.

1. **Stimulated Learning – below 3.0 (0.5x) vs above 4.5 (3.6x)**
2. *Organization – below 3.0 (0.7x) vs above 4.5 (2.1x)*
3. **Communication – above 4.5 (3.1x)**
4. Enthusiasm – (not a significant predictor)
5. **Fairness – above 4.5 (3.2x)**
6. *Feedback – below 3.0 (0.55x) vs above 4.5 (2.1x)*
7. *Concern for Student – above 4.5 (1.7x)*

Understanding Our Data:

Multinomial regression model to determine the impact of variable on the likelihood of the student rating 4 or above on the Overall question (Q8).

1. Student Demographics –
   - International Students (1.1x)
   - Discipline (variance across the institution – ranging from 0.3x to 1.4x)
   - Ethnicity (racially visible – 0.9x)
   - Age (19 – 0.9x; 20-21 – 0.8x)
   - Course in student's faculty (0.9x)
2. Student Grades –
   - C+ or above (1.1x to 2.1x) vs below C (0.8x – 0.7x)
   - Term/Cumulative GPA (higher GPA rates lower – GPA below 2 - 1.3x; GPA between 2 and 3 – 1.1x)

❖ **Note: gender of student is not significant in this model for our institution**

Understanding Our Data:

Multinomial regression model to determine the impact of variable on the likelihood of the instructor receiving a mean of 4.0 or above on the Overall question (Q8).

1. Instructor Demographics –
   - Rank (Assist Prof – 0.6x, Assoc Prof – 0.8x; UTF – 3.1x)
   - Age (below 30 - 0.7x and above 50 – between 0.5x and 0.6x)
   - Education level (non-PhD – 1.7x)
   - Discipline (compared to Science - ranging from 0.5x to 1.6x)
2. Course Characteristics –
   - Term (Winter – 0.9x; Spring/Summer – 0.9x)
   - Class Size (very large – 0.7x; large – 0.8x; small – 1.9x)
   - Class Level (grad – 1.5-1.7x)

❖ **Note: Neither gender nor ethnicity of instructor is significant in this model for our institution**

Student Evaluations and Retention:

Part of a larger academic analytics initiative to support our understanding of student retention

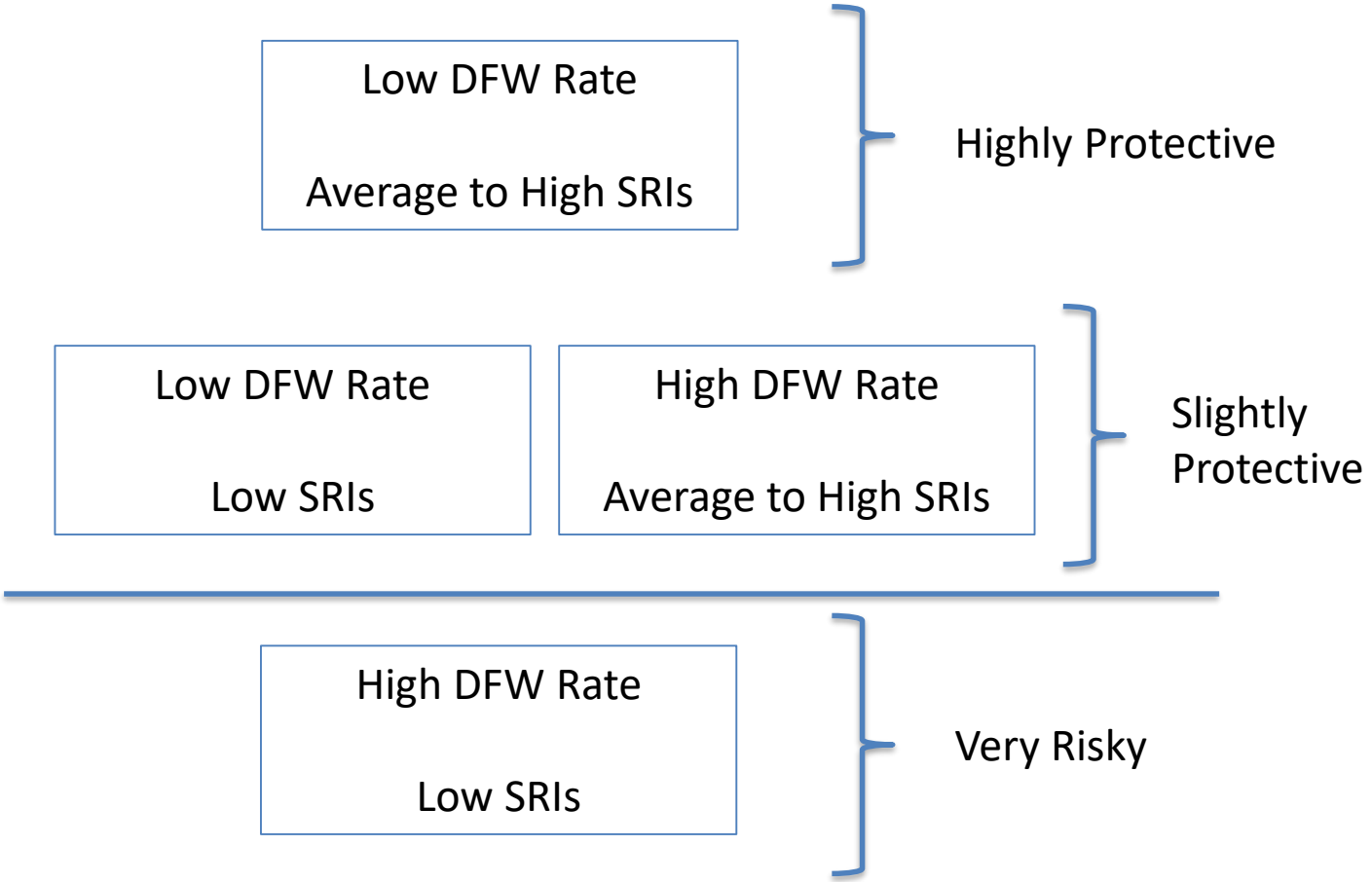
Added four variables to our retention model

1. Low SRI Course (below 3.5) – (1.3x more likely to leave)
2. Net Promoter – (3x more likely to stay)
3. Net Demoter – (1.7x more likely to leave)
4. Students who don't fill out SRI - (3x more likely to stay)

Changed our overall retention model significantly, including:

1. Risky courses (DFW)
2. Whether accepted to 1st choice programs

Student Evaluations and Retention:



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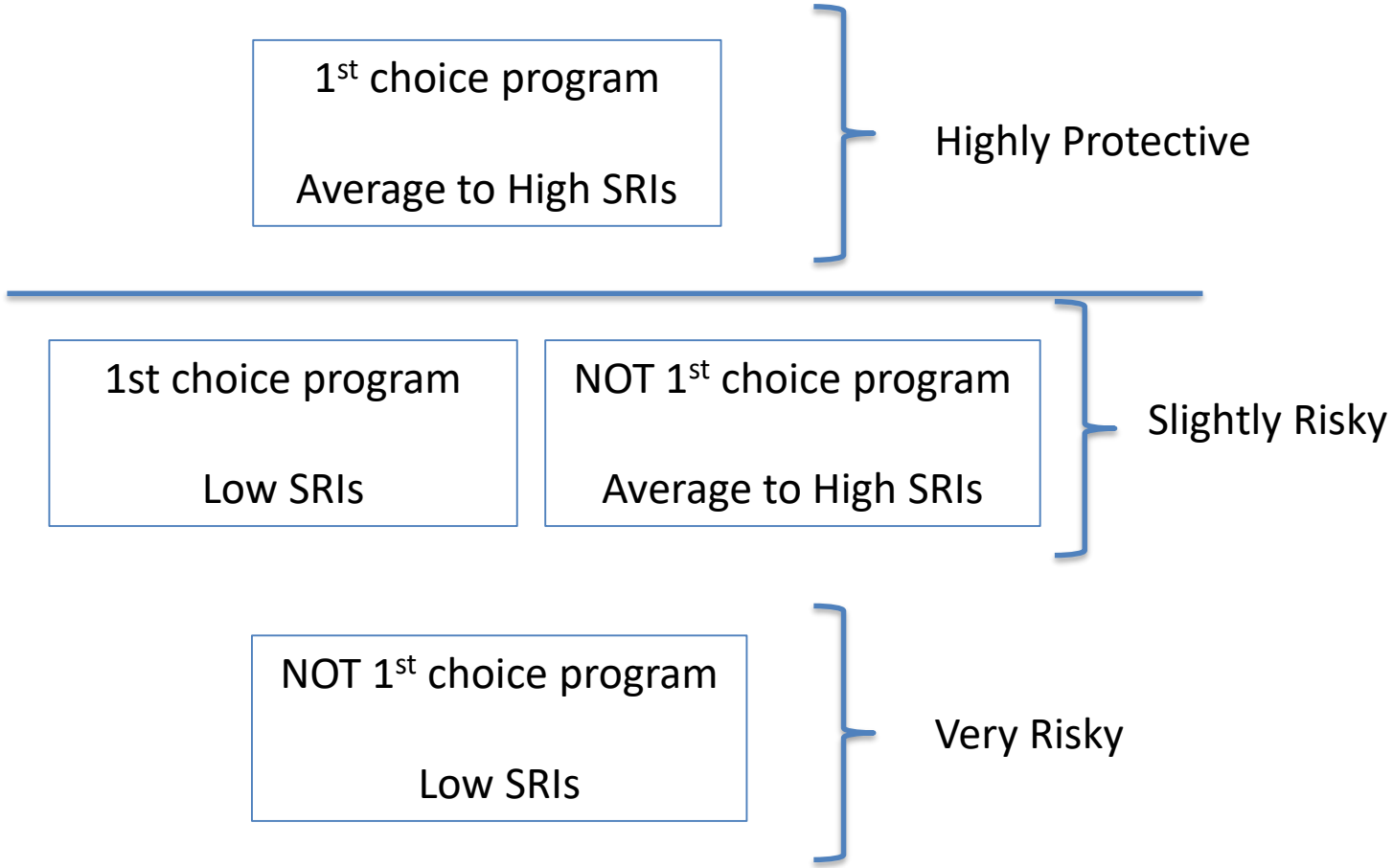

So What?

Two example interventions based on this analysis:

- Paying attention to who is teaching first year courses – particularly if they are historically difficult (High DFW)
- Trying to enhance the 'stickiness' of students admitted to 2nd/3rd choice programs – early program and career advising

4. Moving Forward Analytics with Student Feedback

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Institutional Feedback Literacy

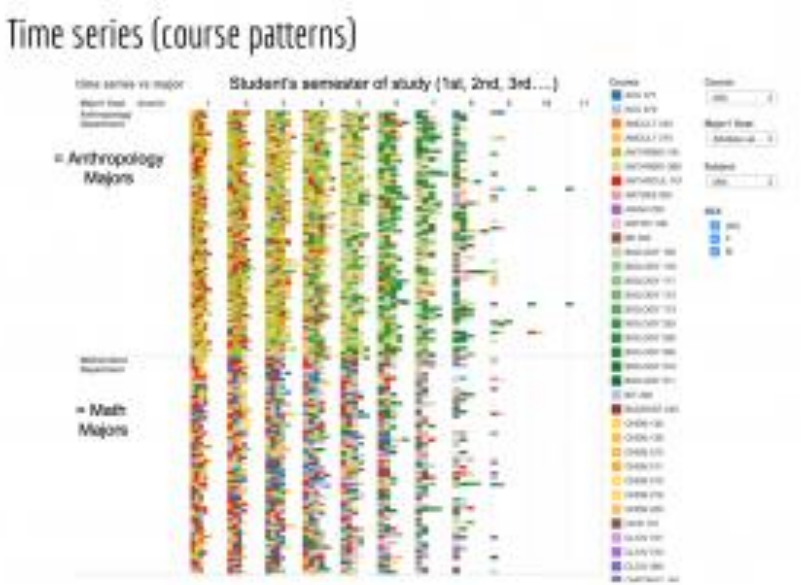
"Arguably, nothing is more important for higher education institutions today than to develop the structures, processes and capacities to incorporate feedback (evidence, data) into the decision-making processes for all aspects of teaching and learning" (Wuetherick, forthcoming)

- How institutions (at all levels) seek out, receive and incorporate feedback into their understanding and decision-making related to teaching and learning
- How we support stakeholders (including students) to both provide and use feedback

Importance of Data Visualization

- Visualization – Data is only useful if we can support faculty data literacy (particularly through intuitive data visualization)

From UBC CTLT:



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Importance of Data Support

- Support – The institution needs to ensure the people who support academic leaders and faculty with data are ready to understand and interpret data effectively

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"Listening to students means more than just hearing them out. … student voice is connected to ongoing, genuine engagement. Institutions of higher education and those who lead them have a responsibility to make decisions that uphold the values and mission of the institution. Engaging students and elevating their voices is critical to achieving this goal." (Templeton, MacCracken, & Smith, 2019)

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