

Strategic Decision Making Through the Use of Analytics

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Legge '22a: Lapoteosi

A Windshield View of Data

- **Rearview Mirror**
 - **Focus is on what has happened.**
 - **Counting the past to inform the present.**
 - **Static. Counts activity.**
 - **Statistics.**
- **Windshield View**
 - **Focus is on what will happen.**
 - **Measuring the past and present to predict the future.**
 - **Dynamic. Interprets trends.**
 - **Analytics.**



Background on Kwantlen and B.C.

- 1 of 25 public post-secondary institutions in BC and 1 of 11 in the greater Vancouver area.
- Former 2-year Community College but as of 1995, expanded mandate to offer Baccalaureate degrees in academic and applied areas and now Master's degrees in applied areas.
- Approximately 17,000 students, 9500 FTE.
- 4 campuses – Undergraduate and ABE courses/programs offered primarily on three of the four campuses.
- Open admission policy (minimum “C” grade in English 12) with some cohort selective entry programs with higher admission criteria.



Culture of Accountability, Evidence and Outcomes

- **Accountability**
 - 25,000 new seats infused into the post secondary system – capacity exceeding demand.
 - Government imposed accountability measures – 3 year reporting.
 - Increased competition has resulted in an increased demand from prospects (and their parents) for “ROI” proof (i.e., How many of your graduates get jobs?”).



Evidence – What Analytics Measures

Optimization	What's the best that can happen?
Predictive Modeling	What will happen next?
Forecasting	What will happen next if these trends continue?
Statistical Analysis	Why is this happening?
Alerts	What actions are needed?
Query/Drill Down	Where exactly is the problem?
Ad hoc Reports	How many, how often, where?
Standard Reports	What happened?



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Evidence – Sources of Analytic Data

INTERNAL SOURCES

- Schedule/Timetetable
- Course Supply/Section count
- Available Faculty
- Room Inventory
- Historical Enrolment data

EXTERNAL SOURCES

- Applications
- Registrations
- Students' program and course needs
- Course load
- Student availability



Accountability, Evidence and Outcomes

- **Outcomes**
 - New government defined success measures based on timely completion and graduation rates. Outputs now as important as inputs.
 - Pressure on services to demonstrate positive contribution to student success and learning.
 - Focus is on effectiveness not just activity.



Accountability, Evidence and Outcomes

- **Risk Factors impeding outcomes:**
 - Being academically underprepared – upwards of 70% of Kwantlen’s graduates took a preparatory course.
 - Attending part-time – only 30% of our UG students study full-time (meaning 15 credits or more); majority are taking 3 courses.
 - Working more than 30 hours per week – 32% of our students work 11 to 20 hours per week; 19% work more than 20 hours per week.
 - Being a first generation student – only 17% of our students had mothers who had completed a bachelor’s degree; 17% had fathers who had.
 - Not entering directly after high school – Student Mobility data.



Windshield View of Data

- **Student Mobility Data**

- Which post secondary (PS) institutions local high school students are choosing to attend.
- Whether high school students from across the province are choosing to attend Kwantlen.
- Whether high school students attend Kwantlen directly after graduation or in subsequent years.
- Which PS institutions Kwantlen students transitioned to and vice versa.
- Whether transfer students are completing degrees at Kwantlen or going elsewhere.
- Whether qualified applicants to Kwantlen are applying and attending other PS institutions or not transitioning at all.
- Whether students are “swirling.”



Transition Matrix: BC High School Graduates of 2001/02 to 2004/05

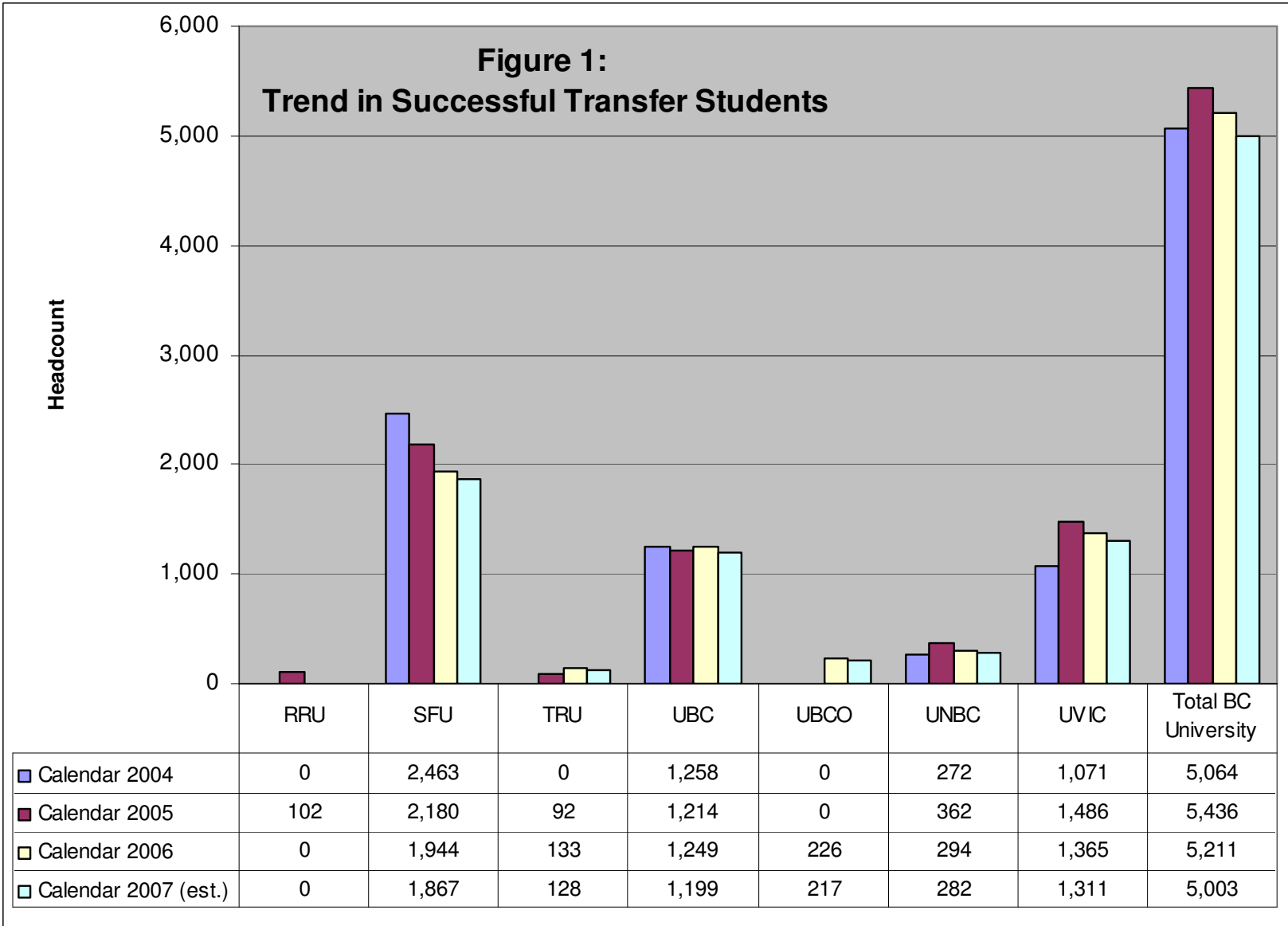
		Post-sec Entry Year					No	Grand	
High School Grad Year	Data	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Transition	Total		<u>Multi-year Trans%</u>
2001/2002	Student Count	21,217	4,577	1,979	1,110	12,292	41,175		
	% of HS Grad Class	51.53%	11.12%	4.81%	2.70%	29.85%	100.00%		70.15%
2002/2003	Student Count		21,821	4,518	1,956	13,804	42,099		
	% of HS Grad Class	0.00%	51.83%	10.73%	4.65%	32.79%	100.00%		67.21%
2003/2004	Student Count			20,436	4,262	15,744	40,442		
	% of HS Grad Class	0.00%	0.00%	50.53%	10.54%	38.93%	100.00%		61.07%
2004/2005	Student Count				21,196	20,540	41,736		
	% of HS Grad Class	0.00%	0.00%	0.00%	50.79%	49.21%	100.00%		50.79%

Student Mobility Data

- **Strategic Decisions in response to flat growth in High school graduates:**
 - Tracking and nurturing our “suspects” to “prospects” to applicants to registrants to graduates through brand management, personalized contact and engagement initiatives.
 - Resulted in Applicant to registrant conversion improvement from 3 to 1 in 2000 to 2 to 1 in 2007.
 - Creation of the “Leaders of Tomorrow” Entrance Scholarships program.
 - Educational Advisors working with applicants and prospects while still in high school.
 - Creation of the B.A. degrees.



Transfer Student Trends



Windshield View of Data

- **Student Centred Scheduling**
 - **Demand Analysis Software** – Measurement of historical trends in enrolment and aggregating data drawn from the academic history of current students, then overlaid with our degree audit system (program completion rules).
 - Can influence our undergraduate timetable to better reflect actual course needs and wants of our “customers.”
 - People don’t just buy products or services, they buy results and results are measured in terms of that which is desired by a customer.



Meeting the Needs of our Customers

Value Equation*

$$\text{VALUE} = \frac{\text{RESULTS} + \text{PROCESS QUALITY}}{\text{COST} + \text{EASE OF ACCESS}}$$

$$\text{Student Value} = \frac{\text{Courses Needed Offered} + \text{Retention} / \text{Timely Graduation}}{\text{Less Empty Seats} / \text{Tuition Revenue Up} + \text{Access to courses when/where/how needed}}$$

*As adapted from J.L. Heskett as cited in Managing for Outcomes by Wayne Sigler (2007)



Student Centred Scheduling

- **Strategic decisions to increase enrolment**
 - Ghosting of sections and tracking fill velocities – real time adjustments to schedules during registration and knowing when to add or cancel based on fill rates in the past.
 - Building schedules with student need and student want incorporated – “Smart Scheduling.”
 - Fall Registration survey shows some improvement:
 - When asked if students were able to register for all courses desired – in 2006 43% satisfaction rating; in 2007 47% satisfaction rating; courses scheduled without time conflicts – in 2006 37% satisfaction rating; in 2007 41%.



Windshield View of Data

- **Service Consolidation / Quality for “Customers”**
 - Over the past 2 years reorganized under one division key student services that influence recruitment and student persistence.
 - Cultural shift based upon Collins’ “Good to Great” model.
 - In just 1 year we are already seeing great results – Fall registrants survey – in 2006 71% satisfied with support services; in 2007 the satisfaction rate has risen to 87%.
 - With no new resources able to collaborate on initiatives to improve student persistence.



Service Consolidation Initiatives

- **Academic Boot Camp – Funded by the Ministry for two offerings (June and August) this year.**
- **Early Alert Pilot project.**
- **On-line Bursary application system saw a 60% increase in applications submitted.**
- **Student Orientation / Parent Orientation.**
- **Young parents program.**
- **Student for a Day.**
- **Student Leadership conference.**



The Role of Culture in a “Culture of Evidence”

- **Leveraging accountability requirements.**
- **Building allies – some Faculty love data.**
- **A Financial Framework to enrolment management.**
- **A “customer” model that shapes quality service.**
- **Small wins, conservative steps.**



Discussion Questions

- **What is the next generation of data going to look like?**
- **Have any institutions successfully developed programming based on a demand model rather than on a faculty interest model?**
- **Who is using buyer behaviour research to inform decision making? How?**
- **Have any institutions deployed a risk/reward mechanism as part of their strategic enrolment management plan? How?**

