


SFU SIMON FRASER UNIVERSITY
THINKING OF THE WORLD

Using the Power of Pivot Tables for Student Retention Reporting at SFU

2007 PNAIRP Best Paper



Presented to : Association for Institutional Research - AIR 2008, Seattle, Washington
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1. SFU - Background Info. & Student Diversity
2. Definitions: Retention, Attrition, Persistence
3. Why is Student Retention at SFU Important?
4. Dynamic Student Retention Reporting Tool:
 - a. Rationale
 - b. Features
 - c. How it Works
 - d. Data Elements – What's In; What's Out
 - e. Let's Take a Peek
5. The State of Student Retention at SFU

PRESENTATION OUTLINE

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WHAT DO YOU KNOW ABOUT SFU?

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Simon Fraser University (SFU):

- Public university located in Burnaby, British Columbia, Canada.
- Named after explorer Simon Fraser.
- Innovative teaching and research university.
- Over 25,000 students (21,000 undergraduate and 4,000 graduate).
- Roughly 90,000 alumni since opening in 1965.
- Roughly 900 faculty and 1,400 support staff.
- Three campuses in Burnaby, Vancouver and Surrey.

SFU FACTS


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Surrey

Burnaby





Vancouver

MULTIPLE CAMPUSES

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SFU has a Diverse Undergraduate Student Population:

Demographics:

- 43% male, 57% female
- 2% aboriginal
- 34% visible minority (self-identification of baccalaureate graduates)
- 9% international
- 40% primarily speak a language other than English at home
- Average age of registrants is 23; new students, 21

STUDENT DIVERSITY

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Diversity, continued:

Family/Living Arrangements:

- 47% of fathers and 38% of mothers of SFU students hold a Bachelor's degree or higher
- 14% of SFU students have dependents
- 65% live at home with their parents
- 8% live in SFU residence
- 59% commute for 30 minutes or longer to attend SFU

STUDENT DIVERSITY, CONT.

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Diversity, continued:

Academic Workload:

- 55% full-time students (24 or more credits/year)
- 10% in co-op
- 58% employed while attending school
- 32% of employed registrants are working more than 20 hours per week

STUDENT DIVERSITY, CONT.

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- **Retention:**
 - "Continued student participation in a learning event to completion, which in higher education could be a course, program, institution or system."
- **Attrition:**
 - "Decline in the number of students from the beginning to the end of the course, program, institution or system."
- **Persistence:**
 - "The result of students' decisions to continue their participation in the learning event."

Berge and Huang (2004)

RETENTION, ATTRITION, PERSISTENCE

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- "Research approaches that try to isolate the influence of a few variables for all students will simply miss the point and probably provide little in the way of useful, practice- or policy-relevant evidence"
(Pascarella and Terenzini, 1998)
- **SFU Solution** – Build a Dynamic Retention Reporting Tool

RATIONALE FOR A DYNAMIC RETENTION REPORTING TOOL

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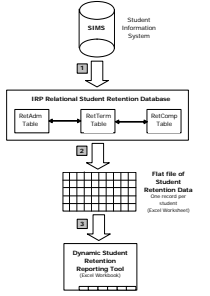
- Excel Workbook with Pivot Tables
- Available on the IRP web site
- Restricted to authorized SFU users
- Current – updated every semester
- Flexibility:
 - ❖ Filtering data
 - ❖ Drilling down
 - ❖ Re-orient rows/columns
 - ❖ Add/remove data elements displayed
 - ❖ Charting
 - ❖ Custom pivot tables and charts

DYNAMIC RETENTION REPORTING TOOL – FEATURES

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1. Extract source data from PeopleSoft Student Information Management System (SIMS) to IRP Student Retention Database.
2. Extract flat file from relational student retention database.
3. Import flat file into Excel workbook; update pivot tables; post on the web.

Figure 1: Three Steps to Creating the Dynamic Student Retention Reporting Tool



DYNAMIC RETENTION REPORTING TOOL – HOW IT WORKS

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**DATA ELEMENTS –
Student retention, attrition and completion
indicators for each student admitted since 1996/97:**

- Year and term of admission to SFU
- Basis of admission category
- Admission GPA score
- Sex, and age at time of admission
- Previous high school and district
- College of transfer and transfer credits
- International student indicator and country of origin

**DYNAMIC RETENTION REPORTING TOOL
– DATA ELEMENTS**

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More data elements:

- Credits attempted and completed
- Cumulative GPA in the first term
- Most recent term of registration at SFU
- Last faculty and program of registration at SFU
- Indicators of survival in first term, first year, second year, etc.
- Retention status (persister, stopout, dropout, completer)
- Cum. SFU credits and tfr credits attempted and passed
- Cum. GPA at 30, 60 and 90 credits
- Average career credit load and full-time student indicator
- Graduation term and elapsed time to graduation
- Graduation degree, faculty and program
- Graduation GPA.

**DYNAMIC RETENTION REPORTING TOOL
– DATA ELEMENTS, CONTINUED**

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**Other Factors Influence Student Retention –
Data Not Captured in the Dynamic Retention Reporting Tool**

- Academic and social integration,
- Positive interaction with faculty, staff and other students,
- Student goals and commitment,
- Student orientation,
- First year experience,
- Finances and ability to pay,
- Access to supplemental instruction,*
- Academic advising,
- Availability of courses,
- Family responsibilities,
- Employment status and hours of employment,
- Living arrangements,
- Student satisfaction.

*"Supplemental instruction" is peer-assisted academic support for students in introductory "gatekeeper" courses with traditionally high failure rates.

STUDENT RETENTION IS MULTI-FACETED

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http://www.sfu.ca/irp

students

FINDING SFU RETENTION INFORMATION

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Student Retention

FINDING SFU RETENTION INFORMATION

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Student Retention

FINDING SFU RETENTION INFORMATION

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STATIC EDITION OF DYNAMIC RETENTION REPORT

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DYNAMIC RETENTION REPORTING TOOL

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Sample Student Retention Questions

- Of the students admitted to Computing Science from BC Secondary Schools to Computing Science, how many **persisted** in Computing after 1, 2, 3 years? How many eventually **graduated** in Computing?
- How is **retention** in a Computing program related to **admission GPA** from BC12 or BC College?
- How does Faculty of Applied Sciences student **retention** compare **across programs** within the Faculty or to **other SFU Faculties**?
- Do **males and females** in Applied Sciences have different retention and completion rates?

RESEARCH QUESTIONS FOR DEMONSTRATION

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Sample Student Retention Questions, cont.

- Do **domestic and international** students have different retention and completion rates? Does this vary by Faculty or admission GPA?
- For students who transferred to Computing Science after initial admission elsewhere, **what programs did they come from?**
- Among **graduates** of Computing Science, **what programs did they initially enter** at SFU?
- Which high schools (or colleges) contributed the most "successful" Computing majors? Name the **top 20 feeder higher schools** ?

RESEARCH QUESTIONS FOR DEMONSTRATION

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Demonstration with a Focus on the Faculty of Applied Sciences

Dynamic Retention Reporting Tool

DEMONSTRATION

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Dynamic Retention Tool Cannot Answer...

- **For students that left CMPT, what were the last few CMPT courses they took?** Answer needs course data from Student System.
- **What are the common major programs for students in a CMPT minor?** Answer needs information on minors; not currently available.
- **How many students indicated a second/third choice of CMPT when they applied? Where did they end up?** Retention database and pivot tables focuses exclusively on registrants, thus applicant data excluded.

QUESTIONS WE CAN'T ANSWER ...YET

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Student Retention

- Retention Statistics
- Understanding Student Retention at SFU
 - Report #1: Student Pathways Through Academic Standing
 - Report #2: Why are Students Leaving SFU?
 - Report #3: How Does SFU Measure Up?
- Retention Presentation at Seattle AIR Forum, May 26, 2008
 - Using Pivot Tables for Dynamic Retention Reporting at SFU
 - Slide Handouts

Related Links

- Academic Information Report
- Tuition Affordability Survey
- Undergraduate Student Survey

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The Dynamic Retention Reporting Tool Is Used to Discover and Describe the State of Student Retention at SFU:

What do the "retention experts" say? How does SFU measure up?

- Student Persistence, Degree Completion Rates and Time to Graduation
 - by high school entrance average,
 - by direct versus delayed entry from high school,
 - by grade point average from college of transfer,
 - by age at admission,
 - by gender,
 - by faculty at admission,
 - by international student status,
 - by cumulative grade point average.
- Dropouts – When Do They Leave?
- Stopouts – Do They Return?

THE STATE OF STUDENT RETENTION AT SFU

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"A number of 'pre-entry characteristics' will strongly influence student retention rates, one of which is high school grades"
– Vincent Tinto.

**SFU Student Retention by Admission % Score:
Direct Entry Students from BC High Schools Admitted to SFU, 1996/97 to 2001/02**

	Admission % Score	None	40-50	50-60	60-70	70-80	80-90	90-100	Grand Total
# Admitted		77	2	51	2,827	3,189	3,492	1,240	10,651
Retention Status at 2006/07:									
Degree Completer		77%	0%	30%	58%	64%	76%	82%	69%
Persister		4%	0%	18%	5%	5%	5%	4%	5%
Stopout		0%	0%	4%	1%	2%	1%	1%	1%
Dropout		19%	100%	32%	35%	28%	18%	12%	29%
Total		100%	100%	100%	100%	100%	100%	100%	100%
Avg Admission GPA		1.88	2.43	2.93	3.24	3.63	4.00	3.37	
Avg CGPA 1st Term		2.85	2.67	2.03	2.19	2.39	2.87	3.31	2.66
Avg CGPA After 30 Credits		2.88	2.63	2.39	2.44	2.56	2.92	3.24	2.70
Avg CGPA After 60 Credits		2.84	2.42	2.46	2.58	2.68	3.00	3.38	2.86
Avg Graduation GPA		3.03	2.65	2.78	2.84	3.11	3.46	3.61	
6-Wr Graduation Rate		47%	0%	31%	44%	48%	57%	61%	51%
Avg Enposed Terms to Grad		12.6	12.6	13.7	14.6	15.3	15.4	15.4	
% DNP Within 2 Yrs of Adm		16.9%	0.0%	38.8%	49.7%	50.3%	15.0%	3.8%	29.0%
% RTW Within 2 Yrs of Adm		3.9%	0.0%	29.4%	20.0%	14.2%	5.1%	0.9%	11.2%

ADMISSION AVERAGE

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- Take advantage of the power of Excel Pivot Tables.
- Pivots Tables - standard feature of Excel; reporting and analysis tool; especially useful for student retention info.
- Allows flexible exploration and analysis in a variety of ways and along a number of different dimensions.

CONCLUSION

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- SFU's Dynamic Retention Reporting Tool transfers the power of information directly to academic administrators and program managers.
- Allows university staff to tailor information to their own needs and make their own relevant judgments about factors associated with retention, attrition and student success in their program area.
- The tool frees up more time for institutional researchers to pursue other important research initiatives!

CONCLUSION

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Slide handouts and paper are available on SFU's Institutional Research and Planning Web Site at

www.sfu.ca/irp/Students/index.html#retention

HANDOUTS

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