H2: JUST WHAT IS RETENTION ANYWAY?

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SO, WHAT IS RETENTION?

It Depends
On whom wants to know
What is the business question?

DIFFERENT PERSPECTIVES OF RETENTION

- Legislators/"System" Executives – Enrolled anywhere

- Institutional Reporting – Enrolled here

- Deans – Enrolled in my college

- Chairs – Enrolled in my program or major

ASK THE GOVERNMENT!

- https://studentaid.gov/help-center/answers/article/retention-rate

- **Retention rate**

   A school's retention rate is the percentage of its first-time students who are seeking bachelor's degrees who return to the institution to continue their studies the following fall.

ISSUES WITH THIS DEFINITION

- ?????

- Full/Part time

- Transfers

- Institutional perspective

COMMON DATA SET DEFINITION

- **B22.** For the <u>cohort</u> of all full-time bachelor's (or equivalent) degree-seeking undergraduate students who entered your institution as first-year students in Fall 2021 (or the preceding summer term), what percentage was enrolled at your institution as of the date your institution calculates its official enrollment in Fall 2022?

ALLOWABLE ADJUSTMENTS

- The initial <u>cohort</u> may be adjusted for students who departed for the following reasons:

  - death

  - permanent disability

  - service in the armed forces

  - foreign aid service of federal government

  - official church missions

THE INSPIRATION QUESTION:

How do you report fall to fall retention by major? I have tried a couple of methods, and each has its weaknesses.

With one method, I only count a student as retained if he or she stayed in the same major from fall1 to fall2. Using this method, my results seem too low - if a major has 2 students and both of them change to other majors within the university, the fall to fall retention for that major = 0% even though those students are still at the university.

THE INSPIRATION QUESTION:

With the other method, I create a list of students in fall 1, and using only students on that list, I count how many are enrolled in each major in fall 1 and in fall 2. Using this method, my results seem too high - if a major has 2 students and 2 new majors transfer into it, the fall to fall retention for that major = 200%, which seems basically meaningless.

ISSUES NOT FULLY ADDRESSED BY POPULAR DEFINITIONS

- Retention by major

- Change major but stay at University

- Additional transfers into major

POSSIBLE SOLUTIONS

- Retention ≠ Net Enrollment

- Net Enrollment = aggregate numbers

- Retention = status of individual students

- Decide which to report

- Consider "reverse retention" or reverse triangle

- Establish a cohort

- Consider transfers separately

POSSIBLE SOLUTIONS

- Report multiple parameters
  - Enrolled
    - Original major
    - Different major
  - Graduated
    - From original major
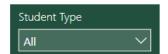   - From different major
  - Gone

EXAMPLES – TRADITIONAL VIEW

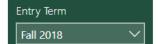## Fall to Fall Retention & Graduation Rates
By Student Type and Residence Hall

Baylor University — OFFICE OF INSTITUTIONAL RESEARCH

Entry Term	Student Type	Entry College	Entry Department
All	All	All	All

N-Year Retention Entry Term	0 Enrolled	Left	Retention	Grad	Grad Rate	1 Enrolled	Left	Retention	Grad	Grad Rate	2 Enrolled	Left	Retention	Grad	Grad Rate	3 Enrolled	Left	Retention	Grad	Grad Rate
Fall 2016	**3,933**		**100.0%**			**3,492**	**441**	**88.8%**			**3,232**	**657**	**83.1%**	**44**	**1.1%**	**2,937**	**718**	**80.4%**	**278**	**7.1%**
First-Time Freshman	3,503		100.0%			3,136	367	89.5%			2,943	557	84.1%	3	0.1%	2,822	607	82.3%	74	2.1%
Transfer Student	430		100.0%			356	74	82.8%			289	100	74.3%	41	9.5%	115	111	50.9%	204	47.4%
Fall 2017	**3,686**		**100.0%**			**3,247**	**439**	**88.1%**			**2,993**	**656**	**82.0%**	**37**	**1.0%**	**2,690**	**704**	**79.3%**	**292**	**7.9%**
First-Time Freshman	3,320		100.0%			2,948	372	88.8%			2,752	565	83.0%	3	0.1%	2,609	600	81.3%	111	3.3%
Transfer Student	366		100.0%			299	67	81.7%			241	91	72.6%	34	9.3%	81	104	43.8%	181	49.5%
Fall 2018	**3,718**		**100.0%**			**3,275**	**443**	**88.1%**			**3,061**	**611**	**83.4%**	**46**	**1.2%**	**2,692**	**715**	**79.0%**	**311**	**8.4%**
First-Time Freshman	3,366		100.0%			2,974	392	88.4%			2,827	538	84.0%	1	0.0%	2,613	631	80.5%	122	3.6%
Transfer Student	352		100.0%			301	51	85.5%			234	73	76.2%	45	12.8%	79	84	48.5%	189	53.7%
Fall 2019	**3,660**		**100.0%**			**3,295**	**365**	**90.0%**			**3,037**	**574**	**84.1%**	**49**	**1.3%**	**2,682**	**639**	**80.8%**	**339**	**9.3%**
First-Time Freshman	3,307		100.0%			2,998	309	90.7%			2,811	493	85.1%	3	0.1%	2,613	550	82.6%	144	4.4%
Transfer Student	353		100.0%			297	56	84.1%			226	81	73.6%	46	13.0%	69	89	43.7%	195	55.2%
Fall 2020	**4,088**		**100.0%**			**3,591**	**497**	**87.8%**			**3,324**	**703**	**82.5%**	**61**	**1.5%**					
First-Time Freshman	3,731		100.0%			3,296	435	88.3%			3,097	628	83.1%	6	0.2%					
Transfer Student	357		100.0%			295	62	82.6%			227	75	75.2%	55	15.4%					
Fall 2021	**4,635**		**100.0%**			**4,157**	**477**	**89.7%**	**1**	**0.0%**										
First-Time Freshman	4,271		100.0%			3,854	417	90.2%												
Transfer Student	364		100.0%			303	60	83.5%	1	0.3%										
Total	**23,720**		**100.0%**			**21,057**	**2,662**	**88.8%**	**1**	**0.0%**	**15,647**	**3,201**	**83.0%**	**237**	**1.2%**	**11,001**	**2,776**	**79.9%**	**1,220**	**8.1%**

EXAMPLES – SPECIFIC MAJOR

Program Migration History
Program by Term for Selected Entry Cohort

Baylor University
OFFICE OF INSTITUTIONAL RESEARCH

Entry Term	Student Type	Entry College & Dept.	Entry Program
Fall 2018	First-Time Freshman	Arts & Sciences (Entr...	Biology (BS)

Elapsed Terms Type	0 Enrolled	Left	Retention	Grad	Grad Rate	1 Enrolled	Left	Retention	Grad	Grad Rate	2 Enrolled	Left	Retention	Grad	Grad Rate	3 Enrolled	Left	Retention	Grad
First-Time Freshman	486		100.0%			462	24	95.1%			430	56	88.5%			416	70	85.6%	
Accounting (BBA)																			
Anthropology (BA)											1		100.0%			1		100.0%	
Anthropology (BS)																2		100.0%	
Aviation Sciences (BSA)											1		100.0%			1		100.0%	
Baylor Business Fellows (BBA)						3		100.0%			4		100.0%			4		100.0%	
Biochemistry (BA)																			
Biochemistry (BS)											4		100.0%			4		100.0%	
Bioinformatics (BSI)						2		100.0%			1		100.0%						
Biology (BA)																			
Biology (BS)	486		100.0%			386	24	94.1%			284	47	85.8%			238	53	81.8%	
Chemistry (BS)																			
Clinical Laboratory Science (BS)						1		100.0%			1		100.0%			1		100.0%	
Comm Sciences and Disorders (BA)						2		100.0%			7		100.0%			6	1	85.7%	
Comm Sciences and Disorders (BS)											1		100.0%			1		100.0%	
Communication (BA)						1		100.0%			2	1	66.7%			4	2	66.7%	
Computer Science (BSCS)											1		100.0%			1		100.0%	
Data Science (BSI)																			
Economics (BBA)																			
Economics (BS)						1		100.0%			1		100.0%			1		100.0%	
Elementary Education (BSED)						1		100.0%			3		100.0%			3		100.0%	
English (BA)											1		100.0%			2		100.0%	
Entr and Corporate Innovation (BBA)																			
Environmental Health Science (BS)						2		100.0%			2		100.0%			2		100.0%	
Environmental Science (BS)						1		100.0%			1		100.0%			1		100.0%	
Environmental Studies (BA)											3		100.0%			3		100.0%	
Exercise Physiology (BS)																2		100.0%	
Finance (BBA)																			
Total	**486**		**100.0%**			**462**	**24**	**95.1%**			**430**	**56**	**88.5%**			**416**	**70**	**85.6%**	

EXAMPLES – SPECIFIC MAJOR

| Elapsed Terms | 0 | | | | | 1 | | | | | 2 | | |
Type	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention
First-Time Freshman	**486**		**100.0%**			**462**	**24**	**95.1%**			**430**	**56**	**88.5%**
Accounting (BBA)													
Anthropology (BA)											1		100.0%
Anthropology (BS)													
Aviation Sciences (BSA)											1		100.0%
Baylor Business Fellows (BBA)						3		100.0%			4		100.0%
Biochemistry (BA)													
Biochemistry (BS)											4		100.0%
Bioinformatics (BSI)						2		100.0%			1		100.0%
Biology (BA)													
Biology (BS)	486		100.0%			386	24	94.1%			284	47	85.8%

Cohort Fall to Fall Retention = Enrolled / (Enrolled + Left)

430 / (430 + 56) = 88.5%

NOTE: By using only Enrolled and Left in the denominator, graduates are automatically removed from the cohort for retention calculation.

EXAMPLES – SPECIFIC MAJOR

| Elapsed Terms | 0 | | | | | 1 | | | | | 2 | | |
Type	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention
First-Time Freshman	**486**		**100.0%**			**462**	**24**	**95.1%**			**430**	**56**	**88.5%**
Accounting (BBA)													
Anthropology (BA)											1		100.0%
Anthropology (BS)													
Aviation Sciences (BSA)											1		100.0%
Baylor Business Fellows (BBA)						3		100.0%			4		100.0%
Biochemistry (BA)													
Biochemistry (BS)											4		100.0%
Bioinformatics (BSI)						2		100.0%			1		100.0%
Biology (BA)													
Biology (BS)	486		100.0%			386	24	94.1%			284	47	85.8%

Major Fall to Fall Retention = Enrolled@major / (Enrolled + Left)@cohort

284 / (430 + 56) = 58.4%

NOTE: Manual calculation, not included on dashboard.

EXAMPLES – SPECIFIC MAJOR

Elapsed Terms	0					1					2		
Type	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention
First-Time Freshman	**486**		**100.0%**			**462**	**24**	**95.1%**			**430**	**56**	**88.5%**
Accounting (BBA)													
Anthropology (BA)											1		100.0%
Anthropology (BS)													
Aviation Sciences (BSA)											1		100.0%
Baylor Business Fellows (BBA)						3		100.0%			4		100.0%
Biochemistry (BA)													
Biochemistry (BS)											4		100.0%
Bioinformatics (BSI)						2		100.0%			1		100.0%
Biology (BA)													
Biology (BS)	486		100.0%			386	24	94.1%			284	47	85.8%

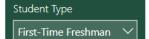Intra-Major Fall to Fall Retention = Enrolled / (Enrolled + Left)

284 / (284 + 47) = 85.8%

NOTE: By using only Enrolled and Left in the denominator, graduates are automatically removed from the cohort for retention calculation.

EXAMPLES – GRADUATION RATES

Entry Term: Fall 2018
Student Type: First-Time Freshman
Entry College & Dept.: Arts & Sciences (Entr...)
Entry Program: Biology (BS)

Elapsed Terms / Type	4 Grad Rate	5 Enrolled	Left	Retention	Grad	Grad Rate	6 Enrolled	Left	Retention	Grad	Grad Rate	7 Enrolled	Left	Retention	Grad	Grad Rate	8 Enrolled	Left	Retention	Grad	Grad Rate
First-Time Freshman		403	83	82.9%			385	89	81.2%	12	2.5%	344	95	78.4%	47	9.7%	60	100	37.5%	326	67.1%
Accounting (BBA)		5		100.0%			5		100.0%			5	1	83.3%			4		100.0%	1	20.0%
Anthropology (BA)		1		100.0%			1		100.0%				1				1				
Anthropology (BS)		2	1	66.7%			2	1	66.7%	1	25.0%	2	1	66.7%	1	25.0%	1			3	75.0%
Aviation Sciences (BSA)		1		100.0%			1		100.0%			1		100.0%						1	100.0%
Baylor Business Fellows (BBA)		4		100.0%			4		100.0%			4		100.0%						4	100.0%
Biochemistry (BA)		1		100.0%						1	100.0%	1		100.0%						1	100.0%
Biochemistry (BS)		5		100.0%			6		100.0%			5	1	83.3%				2		3	60.0%
Bioinformatics (BSI)																					
Biology (BA)		1		100.0%																	
Biology (BS)		205	57	78.2%			197	58	77.3%	5	1.9%	174	59	74.7%	27	10.4%	18	64	22.0%	176	68.2%
Chemistry (BS)		1		100.0%			1		100.0%			1		100.0%						1	100.0%
Clinical Laboratory Science (BS)																					
Comm Sciences and Disorders (BA)		6	2	75.0%			5	3	62.5%			5	3	62.5%				3		5	62.5%
Comm Sciences and Disorders (BS)		2		100.0%			2		100.0%			2		100.0%						2	100.0%
Communication (BA)		7	3	70.0%			7	3	70.0%			6	4	60.0%			1	3	25.0%	6	60.0%
Computer Science (BSCS)																					
Data Science (BSI)		2		100.0%			1		100.0%			1		100.0%			1		100.0%		
Economics (BBA)		2		100.0%			2		100.0%			2		100.0%						2	100.0%
Economics (BS)																					
Elementary Education (BSED)		3		100.0%			3		100.0%			3		100.0%						3	100.0%
English (BA)		2		100.0%			2		100.0%			2		100.0%						2	100.0%
Entr and Corporate Innovation (BBA)		1		100.0%			1		100.0%												
Environmental Health Science (BS)																					
Environmental Science (BS)		2		100.0%			2		100.0%			1		100.0%						1	100.0%
Environmental Studies (BA)		3		100.0%			3		100.0%			3		100.0%	1	25.0%	1	1	50.0%	2	50.0%
Exercise Physiology (BS)		2		100.0%			2		100.0%			2		100.0%						2	100.0%
Finance (BBA)		2		100.0%			3		100.0%			4		100.0%				1		3	75.0%
Total		**403**	**83**	**82.9%**			**385**	**89**	**81.2%**	**12**	**2.5%**	**344**	**95**	**78.4%**	**47**	**9.7%**	**60**	**100**	**37.5%**	**326**	**67.1%**

EXAMPLES – GRADUATION RATES

Elapsed Terms	4	5					6					7					8				
Type	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate
⊟ **First-Time Freshman**		403	83	82.9%			385	89	81.2%	12	2.5%	344	95	78.4%	47	9.7%	60	100	37.5%	326	67.1%
Accounting (BBA)		5		100.0%			5		100.0%			5	1	83.3%			4		100.0%	1	20.0%
Anthropology (BA)		1		100.0%			1		100.0%			1					1				
Anthropology (BS)		2	1	66.7%			2	1	66.7%	1	25.0%	2	1	66.7%	1	25.0%	1			3	75.0%
Aviation Sciences (BSA)		1		100.0%			1		100.0%			1		100.0%						1	100.0%
Baylor Business Fellows (BBA)		4		100.0%			4		100.0%			4		100.0%						4	100.0%
Biochemistry (BA)		1		100.0%						1	100.0%				1	100.0%				1	100.0%
Biochemistry (BS)		5		100.0%			6		100.0%			5	1	83.3%						2		3	60.0%
Bioinformatics (BSI)																					
Biology (BA)		1		100.0%																	
Biology (BS)		205	57	78.2%			197	58	77.3%	5	1.9%	174	59	74.7%	27	10.4%	18	64	22.0%	176	68.2%

Cohort Graduation Rate = Grad / (Enrolled + Left + Grad)

326 / (60 + 100 + 326) = 67.1%

EXAMPLES – GRADUATION RATES

Elapsed Terms	4	5					6						7						8				
Type	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate
First-Time Freshman		403	83	82.9%			385	89	81.2%	12	2.5%	344	95	78.4%	47	9.7%	60	100	37.5%	326	67.1%
Accounting (BBA)		5		100.0%			5		100.0%			5	1	83.3%			4		100.0%	1	20.0%
Anthropology (BA)		1		100.0%			1		100.0%			1					1				
Anthropology (BS)		2	1	66.7%			2	1	66.7%	1	25.0%	2	1	66.7%	1	25.0%	1			3	75.0%
Aviation Sciences (BSA)		1		100.0%			1		100.0%			1		100.0%						1	100.0%
Baylor Business Fellows (BBA)		4		100.0%			4		100.0%			4		100.0%						4	100.0%
Biochemistry (BA)		1		100.0%						1	100.0%				1	100.0%				1	100.0%
Biochemistry (BS)		5		100.0%			6		100.0%			5	1	83.3%						2	3	60.0%
Bioinformatics (BSI)																					
Biology (BA)		1		100.0%																	
Biology (BS)		205	57	78.2%			197	58	77.3%	5	1.9%	174	59	74.7%	27	10.4%	18	64	22.?%	176	68.2%

Major Graduation Rate = Grad@major / (Enrolled + Left + Grad)@cohort

176 / (60 + 100 + 326) = 45.6%

EXAMPLES – GRADUATION RATES

Elapsed Terms	4	5						6						7						8				
Type	Grad Rate	Enrolled	Left	Retention	Grad	Grad Rate		Enrolled	Left	Retention	Grad	Grad Rate		Enrolled	Left	Retention	Grad	Grad Rate		Enrolled	Left	Retention	Grad	Grad Rate
⊟ **First-Time Freshman**		403	83	82.9%				385	89	81.2%	12	2.5%		344	95	78.4%	47	9.7%		60	100	37.5%	326	67.1%
Accounting (BBA)		5		100.0%				5		100.0%				5	1	83.3%				4		100.0%	1	20.0%
Anthropology (BA)		1		100.0%				1		100.0%				1						1				
Anthropology (BS)		2	1	66.7%				2	1	66.7%	1	25.0%		2	1	66.7%	1	25.0%		1			3	75.0%
Aviation Sciences (BSA)		1		100.0%				1		100.0%				1		100.0%							1	100.0%
Baylor Business Fellows (BBA)		4		100.0%				4		100.0%				4		100.0%							4	100.0%
Biochemistry (BA)		1		100.0%							1	100.0%					1	100.0%					1	100.0%
Biochemistry (BS)		5		100.0%				6		100.0%				5	1	83.3%					2		3	60.0%
Bioinformatics (BSI)																								
Biology (BA)		1		100.0%																				
Biology (BS)		205	57	78.2%				197	58	77.3%	5	1.9%		174	59	74.7%	27	10.4%		18	64	22.0%	176	68.2%

Intra-Major Graduation Rate = Grad / (Enrolled + Left + Grad)

176 / (18 + 64 + 176) = 68.2%

DATA STRUCTURE

ID	Entry Term	Entry Department	Term	Term Department	Enrolled	Gone	Graduated
6185933	Fall 2009	Business	Fall 2009	Business	1	.	.
6185933	Fall 2009	Business	Spring 2010	Business	1	.	.
6185933	Fall 2009	Business	Fall 2010	Business	1	.	.
6185933	Fall 2009	Business	Spring 2011	Business	1	.	.
6185933	Fall 2009	Business	Fall 2011	Business	1	.	.
6185933	Fall 2009	Business	Spring 2012	Marketing	1	.	.
6185933	Fall 2009	Business	Fall 2012	Marketing	1	.	.
6185933	Fall 2009	Business	Spring 2013	Marketing	1	.	.
6185933	Fall 2009	Business	Fall 2013	Marketing	1	.	.
6185933	Fall 2009	Business	Spring 2014	Marketing	.	.	1
6185933	Fall 2009	Business	Fall 2014	Marketing	.	.	1
6185933	Fall 2009	Business	Spring 2015	Marketing	.	.	1
6552468	Fall 2009	Biology	Fall 2009	Biology	1	.	.
6552468	Fall 2009	Biology	Spring 2010	HHPR	1	.	.
6552468	Fall 2009	Biology	Fall 2010	HHPR	1	.	.
6552468	Fall 2009	Biology	Spring 2011	HHPR	1	.	.
6552468	Fall 2009	Biology	Fall 2011	HHPR	.	1	.
6552468	Fall 2009	Biology	Spring 2012	HHPR	.	1	.

CREATE A CROSSTAB REPORT

- Filter by Entry Major and Entry Department

- Term Department for rows

- Terms as Columns

- Sum of Enrolled, Gone, Graduated as measures

EXAMPLES

		Status after Four Years								
		Enrolled: Diff. Dept.		Enrolled: Same Dept.		Left Baylor		Graduated: Diff. Dept.		Graduated: Same Dept.	
	N	N	%	N	%	N	%	N	%	N	%
Entry Department											
Institute & Special Studies	8	2	25.00	.	.	3	37.50	.	.	3	37.50
Institute for Air Science	22	1	4.55	3	13.64	8	36.36	5	22.73	5	22.73
Journalism/Publc Rel/New Media	178	7	3.93	9	5.06	40	22.47	59	33.15	63	35.39
Latin American Studies	1	1	100.00	.	.	.	.	.	.	.	.
Mathematics	73	6	8.22	3	4.11	26	35.62	18	24.66	20	27.40
Modern Foreign Language	51	3	5.88	2	3.92	12	23.53	20	39.22	14	27.45
Museum Studies	5	.	.	.	.	1	20.00	3	60.00	1	20.00
Music	354	19	5.37	92	25.99	86	24.29	26	7.34	131	37.01
Nursing	392	29	7.40	41	10.46	143	36.48	54	13.78	125	31.89
Philosophy	42	7	16.67	2	4.76	12	28.57	11	26.19	10	23.81
Physics	38	5	13.16	2	5.26	8	21.05	14	36.84	9	23.68
Political Science	408	23	5.64	14	3.43	87	21.32	93	22.79	191	46.81
Psychology & Neuroscience	716	66	9.22	47	6.56	227	31.70	160	22.35	216	30.17
Religion	64	7	10.94	2	3.13	13	20.31	18	28.13	24	37.50
School of Social Work	59	3	5.08	2	3.39	15	25.42	9	15.25	30	50.85
Slavic Studies	2	.	.	.	.	.	.	1	50.00	1	50.00
Sociology	23	4	17.39	.	.	8	34.78	6	26.09	5	21.74
Statistical Sciences	5	1	20.00	.	.	1	20.00	3	60.00	.	.
Theater Arts	113	3	2.65	5	4.42	18	15.93	13	11.50	74	65.49
Undeclared Department	1069	182	17.03	1	0.09	286	26.75	600	56.13	.	.
University Scholars	175	11	6.29	4	2.29	20	11.43	40	22.86	100	57.14
All	11675	1152	9.87	995	8.52	3077	26.36	2694	23.07	3757	32.18

"TAKE AWAYS"

- There is no single "right" answer

- Be consistent

  - Establish a cohort

QUESTIONS OR COMMENTS

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