Student-Teacher Supply and Demand Model

(February 7-8, 2013)

LANGE research·evaluation

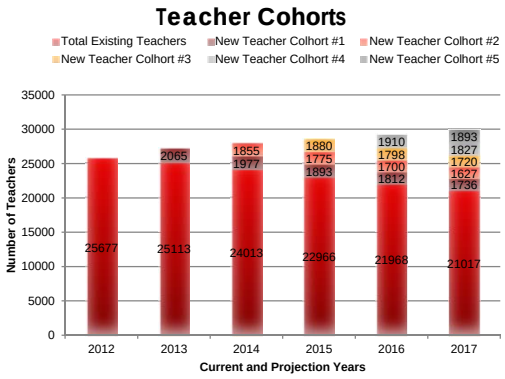
b.lange@langeresearch.com

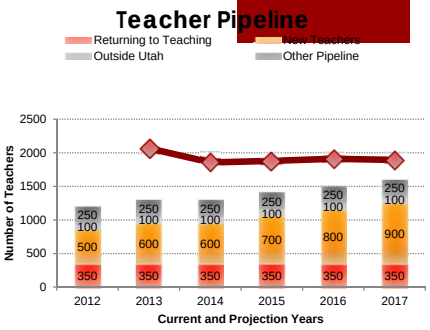
Purpose Today

- What is the LRE Student-Teacher S&D Model?
  - Policy and Practice Planning and Implementation Resource
- Who Can Benefit From Using the Model?
- Model Predictions: How Many Students Can We Expect?
- Model Predictions: How Many Teachers Will We Need?
- Model Predictions: Where Will the Teachers Come From?
- Model Predictions: Is There A Teacher Shortage?
- Model Predictions: What's the $ Bottom Line?
- What If.....

Who Benefits?

- LEA and SEA SPED/GenEd Directors and Administrators
- Staff Developers
- IHE Planners
- State Government Planners





What Data Do We Need?

- Mostly - Data We Already Have
  - Teacher Data
  - Student Enrollment Data
  - Pipeline Data from IHEs
  - Revenue Data
  - Expenditure Data

Teacher Data

LANGE research·evaluation

Utah
Statewide Model

Teachers	State		Teacher Units	FTEs	
Data Year	2012				
Teacher Group	FTEs	Average Salary	Average Benefits	Average Increase	Average Turnover
Group 1	1530	$30,000	30.0%	1.5%	8.0%
Group 2	11329	$33,000	35.0%	1.5%	5.0%
Group 3	10132	$45,000	39.0%	1.5%	3.0%
Group 4	2686	$45,000	39.0%	1.5%	5.0%
Total/Aveage	25677	$38,812	36.7%	1.5%	4.4%

Teacher Groupings

LANGE research·evaluation

Alaska Statewide Model

Teachers	Urban		Teacher Units	FTEs	
Data Year	2012				
Teacher Group	FTEs	Average Salary	Average Benefits	Average Increase	Average Turnover
AK prepared, 0-3 yrs exp	359	$49,193	35.0%	4.8%	12.5%
Non-AK prepared, 0-3 yrs exp	1062	$49,915	35.0%	4.5%	23.5%
AK prepared 3-9 yrs exp	882	$57,949	35.0%	3.9%	8.0%
Non-AK prepared, 3-9 yrs exp	1818	$59,069	35.0%	4.2%	14.8%
All teachers, 10-19 yrs exp	2867	$69,105	35.0%	3.7%	7.8%
All teachers, 20+ yrs exp	1324	$75,793	35.0%	3.1%	14.4%
Total/Aveage	8312	$63,480	35.0%	3.9%	12.6%

Full-Time Equivalents (FTEs) by Position
Licensed and Classified Personnel
FY 2011

INSTRUCTION							SUPPO	
CLASSROOM TEACHERS								
n								
ecial	Kindergarten	Elementary	Secondary	Special Education	Instructional Aides	Instructional Coordinators and Supervisors	Elementary Guidance Counselors	Secondary Guidance Counselors
CTUS base	CACTUS Database	CACTUS Database	CACTUS Database	CACTUS Database	Classified Personnel Report	CACTUS Database	CACTUS Database	CACTUS Database
0.000	1.340	9.320	12.550	2.070	10.000	1.000	0.500	0.500
3.000	34.500	270.050	253.420	92.940	278.070	45.980	0.000	15.500
0.000	2.000	11.330	16.690	2.000	6.950	1.260	0.500	0.500
7.500	82.460	509.400	414.600	144.510	491.310	112.600	12.350	25.200
2.750	9.040	62.210	80.880	15.340	56.300	21.350	4.000	3.310
4.500	11.330	80.070	102.720	30.230	71.190	6.500	0.000	4.820
2.710	7.000	54.490	86.380	12.990	113.750	4.980	0.000	3.890
0.130	3.000	33.200	30.110	4.870	22.770	2.160	1.000	2.000
0.500	0.500	8.320	8.100	1.640	5.810	1.540	0.250	0.410
7.000	29.980	263.090	270.460	77.040	167.220	32.760	2.060	16.270
3.000	17.480	129.730	90.680	29.810	109.000	20.570	2.930	5.300
4.000	10.920	111.370	97.020	28.350	73.650	22.000	4.000	6.500
8.440	65.510	466.580	506.650	113.910	294.140	117.040	12.350	39.030
0.250	1.270	12.760	18.180	2.650	10.070	1.250	0.000	0.860
10.000	62.030	564.700	519.450	166.780	383.900	84.970	18.860	37.280
24.400	**1,183.560**	**10,453.190**	**9,433.260**	**2,547.490**	**7,649.450**	**1,629.310**	**137.730**	**633.130**
0.000	**93.020**	**876.120**	**698.700**	**138.410**	**564.550**	**69.760**	**5.530**	**30.450**
24.400	**1,276.580**	**11,329.310**	**10,131.960**	**2,685.900**	**8,214.000**	**1,699.070**	**143.260**	**663.580**

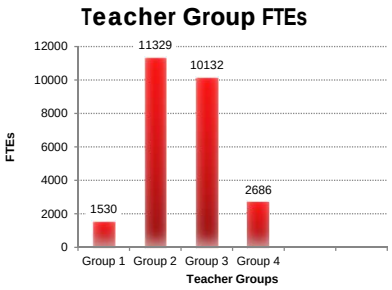
Salaries and Benefits

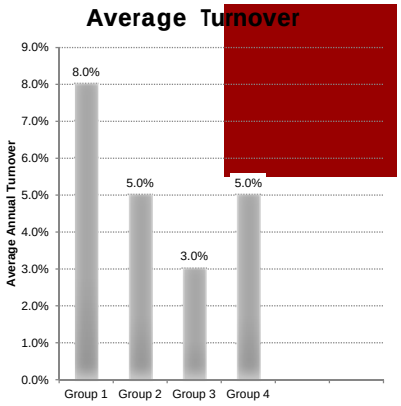
Educator Salary and Benefits
FY 2011

	Classroom Teachers									
School Administrators' Median Salary	Median Beginning Salary	Median Salary	Soc. Sec.	Retirement	Health Insurance	Dental Insurance	Life Insurance	Industrial Insurance	Unemployment Insurance	Long-Term Disability
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
82,905	$ 32,051	$ 42,244	$ 3,459	$ 8,056	$ 13,052	$ -	$ 36	$ 158	$ 39	$ 1
70,037	$ 33,172	$ 50,238	$ 3,656	$ 8,653	$ 9,567	$ 712	$ 57	$ 315	$ -	$ 1
75,087	$ 30,792	$ 45,503	$ 3,385	$ 6,955	$ 9,173	$ -	$ 101	$ 147	$ 44	$
85,963	$ 31,255	$ 48,551	$ 3,685	$ 8,584	$ 10,145	$ -	$ 26	$ 134	$ 48	$ 1
84,766	$ 31,526	$ 45,230	$ 3,488	$ 8,124	$ 6,775	$ -	$ 54	$ 365	$ 46	$ 1
69,727	$ 32,913	$ 48,067	$ 3,391	$ 6,969	$ 16,615	$ -	$ 63	$ 360	$ 44	$
68,690	$ 24,593	$ 41,428	$ 3,368	$ 6,920	$ 13,992	$ -	$ 60	$ 374	$ 44	$ 1
75,061	$ 32,658	$ 48,523	$ 3,596	$ 8,377	$ 12,111	$ 909	$ 58	$ 72	$ 51	$
73,609	$ 32,120	$ 43,040	$ 3,358	$ 7,822	$ 9,737	$ -	$ 69	$ 120	$ 33	$ 1
79,548	$ 33,240	$ 50,690	$ 3,673	$ 7,548	$ 15,260	$ 756	$ 56	$ 340	$ 48	$
53,099		$ 49,427	$ 3,659	$ 7,912	$ 10,828	$ 1,151	$ 142	$ 208	$ 48	$ 1
70,772	$ 31,121	$ 44,514	$ 3,380	$ 7,874	$ 6,879	$ -	$ 61	$ 301	$ 44	$ 2
80,257	$ 32,126	$ 47,338	$ 3,530	$ 7,254	$ 8,851	$ -	$ 50	$ 322	$ 46	$
71,313	$ 28,664	$ 40,906	$ 3,120	$ 7,268	$ 12,776	$ 914	$ 82	$ 159	$ -	$ 1
86,331	$ 32,889	$ 44,709	$ 3,524	$ 7,242	$ 10,967	$ -	$ 61	$ 361	$ 46	$ 1
72,105	$ 32,342	$ 46,943	$ 3,475	$ 7,016	$ 6,868	$ -	$ 88	$ 187	$ 47	$ 2
59,487	$ 39,176	$ 44,910	$ 3,516	$ 7,226	$ 16,368	$ 1,174	$ 53	$ 145	$ 46	$ 2
78,330	$ 18,920	$ 46,128	$ 3,562	$ 8,296	$ 13,032	$ -	$ 106	$ 245	$ 24	$
69,877	$ 32,369	$ 52,038	$ 3,872	$ 9,019	$ 13,032	$ 1,306	$ 48	$ 391	$ 7	$ 1
73,406	$ 33,430	$ 42,932	$ 3,364	$ 6,912	$ 15,826	$ -	$ 99	$ 224	$ 44	$
85,849	$ 35,172	$ 50,772	$ 3,838	$ 8,388	$ 9,651	$ -	$ 104	$ 237	$ 50	$ 1
80,007	$ 27,812	$ 41,777	$ 3,115	$ 6,400	$ 10,226	$ -	$ 62	$ 165	$ 41	$
65,742	$ 32,098	$ 45,202	$ 3,338	$ 7,776	$ 16,716	$ -	$ 58	$ 261	$ 4	$
69,972	$ 20,352	$ 48,126	$ 3,490	$ 8,951	$ 14,050	$ 907	$ 42	$ 254	$ 48	$ 1
79,495	$ 33,283	$ 43,678	$ 3,407	$ 7,000	$ 8,408	$ 543	$ 28	$ 114	$ 114	$ 2
91,004	$ 40,442	$ 58,244	$ 4,461	$ 9,147	$ 8,472	$ 695	$ 60	$ 361	$ 39	$ 1
48,617	$ 32,235	$ 47,270	$ 3,448	$ 7,085	$ 13,380	$ -	$ 61	$ 190	$ 45	$
79,860	$ 33,800	$ 45,926	$ 3,518	$ 7,229	$ 9,700	$ -	$ 38	$ 460	$ 46	$ 1
69,023	$ 34,023	$ 50,901	$ 3,639	$ 7,478	$ 16,380	$ 941	$ 9	$ 40	$ 48	$ 2
69,264	$ 37,280	$ 51,234	$ 3,856	$ 8,176	$ 8,030	$ 585	$ 123	$ 176	$ 36	$ 2

Wage, Benefit Adjustments

Licensed Teachers				Licensed Administrators				Classified Employees				Medical Ins.
Base Wage Increase		Step/Lane Increase		Base Wage Increase		Step/Lane Increase		Base Wage Increase		Step Increase		Percentage
Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Increase
-	0.0%	$ 855,367.00	0.5%	$ -	0.0%	$ 72,139.00	0.5%	$ -	0.0%	$ 103,057.00	0.5%	0.0%
3,979,188.00	1.0%	$ 110,000.00	3.4%	$ 566,178.00	0.8%	$ 15,000.00	3.0%	$ 2,163,110.00	1.1%	$ 30,000.00	5.4%	8.0%
-	0.0%	$ 457,477.00	1.6%	$ -	0.0%	$ 19,511.00	0.7%	$ -	0.0%	$ 103,566.00	1.1%	8.0%
-	0.0%	$ 394,744.00	1.2%	$ -	0.0%	$ 41,147.00	1.2%	$ -	0.0%	$ 118,630.00	1.7%	0.0%
2,776,801.00	3.5%	$ 401,934.00	0.5%	$ 229,253.00	2.0%	$ -	0.0%	$ 553,768.00	2.5%	$ -	0.0%	0.0%
-	0.0%	$ -	5.0%	$ -	0.0%	$ -	5.0%	$ -	0.0%	$ -	5.0%	14.4%
35,227.00	1.0%	$ 12,498.00	0.0%	$ 1,498.00	1.0%	$ 9,583.00	0.1%	$ 5,109.00	1.0%	$ 2,748.00	0.0%	5.5%
2,243,772.00	1.4%	$ 4,120,493.00	2.6%	$ 231,518.00	1.4%	$ 348,601.00	2.1%	$ 496,710.00	1.4%	$ 747,906.00	2.1%	4.0%
-	0.0%	$ 123,000.00	1.2%	$ -	0.0%	$ 22,000.00	1.7%	$ -	0.0%	$ 54,000.00	1.0%	11.0%
68,841.00	1.0%	$ 66,309.00	1.4%	$ 12,892.00	1.0%	$ 3,250.00	0.3%	$ 46,325.00	1.0%	$ 58,431.00	1.6%	7.5%
(1,122.00)	-4.0%	$ 4,579.00	0.2%	$ (1,988.00)	-4.0%	$ -	0.0%	$ (1,309.00)	-4.0%	$ -	0.0%	5.5%
31,438.00	0.8%	$ 52,471.00	2.2%	$ (36,931.00)	-5.7%	$ 10,863.00	1.6%	$ 4,384.00	0.2%	$ 50,309.00	2.3%	0.0%
-	0.0%	$ 2,634,002.00	1.6%	$ -	0.0%	$ 150,280.00	1.0%	$ -	0.0%	$ 422,786.00	1.1%	0.0%
-	0.0%	$ 340,211.00	1.9%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ 115,221.00	1.3%	5.3%
-	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	0.0%
-	0.0%	$ 97,214.00	2.2%	$ -	0.0%	$ 16,017.00	1.8%	$ -	0.0%	$ 5,267.00	0.6%	5.4%
-	0.0%	$ 48,000.00	1.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ 17,000.00	1.0%	5.5%
-	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	-0.3%
-	0.0%	$ 107,892.00	1.5%	$ -	0.0%	$ 17,218.00	1.4%	$ -	0.0%	$ 26,815.00	0.7%	14.5%
-	0.0%	$ 84,794.00	4.0%	$ -	0.0%	$ 3,967.00	2.0%	$ -	0.0%	$ 18,254.00	5.0%	0.0%
54,000.00	0.5%	$ 295,000.00	1.6%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	0.0%
1,050,660.31	1.7%	$ 639,257.18	1.0%	$ 85,068.04	1.2%	$ 32,718.48	0.5%	$ -	0.0%	$ 201,148.30	0.7%	0.0%
101,600.00	2.0%	$ 57,273.00	1.7%	$ 15,272.00	2.0%	$ 16,375.00	2.1%	$ 50,788.00	2.0%	$ 30,672.00	1.2%	14.4%
None	None	$ 7,190.00	0.2%	None	None	$ -	0.0%	None	None	$ -	0.0%	5.5%
864,151.00	2.9%	$ -	0.0%	$ 92,213.00	2.9%	$ -	0.0%	$ 338,943.00	2.9%	$ -	0.0%	0.0%
-	0.0%	$ -	0.0%	$ -	0.0%	$ 30,407.00	1.1%	$ -	0.0%	$ 220,848.00	2.7%	42.0%
-	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	$ -	0.0%	0.0%
-	0.5%	$ -	2.0%	$ -	2.0%	$ -	0.0%	$ -	2.0%	$ -	0.0%	0.0%
99,309.18	6.0%	$ 21,897.00	1.2%	$ 14,074.86	6.0%	$ -	0.0%	$ 30,774.58	6.5%	$ 3,556.00	75.0%	0.0%
-	0.0%	$ 407,163.79	0.5%	$ -	0.0%	$ 49,491.00	0.7%	$ -	0.0%	$ 112,793.00	0.6%	0.0%
-	0.0%	$ 210,849.00	1.6%	$ -	0.0%	$ 31,914.00	1.1%	$ -	0.0%	$ 137,526.00	2.0%	5.5%
-	0.0%	$ 186,327.00	1.6%	$ -	0.0%	$ 10,511.00	0.9%	$ -	0.0%	$ 66,969.00	1.4%	5.5%
81,569.00	1.0%	$ 136,427.00	1.1%	$ 8,522.00	1.0%	$ -	0.0%	$ 43,604.00	1.0%	$ 31,167.00	0.2%	0.0%
21,706.00	0.6%	$ 60,018.00	1.7%	$ 3,429.00	1.0%	$ -	0.0%	$ 86,157.00	4.8%	$ 25,752.00	1.4%	5.4%
-	0.0%	$ 35,298.00	4.4%	$ -	0.0%	$ 6,423.00	3.1%	$ -	0.0%	$ 4,472.00	1.3%	5.5%
-	0.0%	$ 1,124,765.00	3.7%	$ 35,712.00	1.0%	$ 41,574.00	1.2%	$ 145,481.00	1.0%	$ 276,521.00	2.6%	0.0%
420,523.44	3.0%	$ 26,712.00	0.1%	$ 66,546.27	3.0%	$ -	0.0%	$ 60,684.87	4.5%	$ -	0.0%	0.0%
-	0.0%	$ 425,179.00	3.4%	$ -	0.0%	$ 50,168.00	3.6%	$ -	0.0%	$ 91,770.00	2.3%	5.5%
-	0.0%	$ 741,350.00	1.1%	$ -	0.0%	$ 65,003.00	0.7%	$ -	0.0%	$ 227,200.00	0.8%	3.0%
-	0.0%	$ 15,795.00	1.0%	$ -	0.0%	$ (8,745.00)	-11.0%	$ -	0.0%	$ (14,891.00)	-2.0%	0.0%
2,585,090.88	3.0%	$ -	0.0%	$ 116,334.24	3.0%	$ -	0.0%	$ 730,263.29	3.0%	$ -	0.0%	0.0%
14,413,078.81	**0.0%**	**$ 14,283,482.97**	**1.2%**	**$ 1,439,591.41**	**0.0%**	**$ 1,855,215.49**	**0.0%**	**$ 4,754,791.74**	**0.0%**	**$ 3,289,495.30**	**1.0%**	**3.0%**
8,412,615.33	**1.5%**	**$ 309,180.11**	**0.0%**	**$ 643,292.96**	**0.0%**	**$ 91,979.00**	**0.0%**	**$ 2,066,725.43**	**0.0%**	**$ 179,874.00**	**0.0%**	**0.0%**
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]





How Many Students Can We Expect?

- What enrollment changes should we expect?
- What about "spikes"?
- What class sizes exist now?
- What class sizes should we expect in the future?

Students	Urban					
Year	2012	2013	2014	2015	2016	2017
Number	588000					
Student-Teacher Ratio	22.9					
Group 1		22.9	22.9	22.9	22.9	22.9
Group 2		22.9	22.9	22.9	22.9	22.9
Group 3		22.9	22.9	22.9	22.9	22.9
Group 4		15	15	15	15	15
0						
0						
0						
0						
0						
0						
Annual Enrollment Change	-	2.1%	2.6%	2.4%	2.4%	2.2%

Utah
State Public School Enrollment and Population
1976-2011 and Projected 2012-2021

Source	Year	October 1 Enrollment	Annual Change	Percent Change	July 1 State Pop	Annual Change	Percent Change	Enrollment/ Population
Projected								
3,5	**2012**	600,244	12,499	2.1%	3,071,748	71,932	2.3%	19.5%
4,5	**2013**	615,850	15,606	2.6%	3,144,044	72,296	2.3%	19.6%
4,5	**2014**	630,814	14,964	2.4%	3,216,563	72,519	2.3%	19.6%
4,5	**2015**	645,663	14,849	2.4%	3,289,506	72,943	2.2%	19.6%
4,5	**2016**	659,768	14,105	2.2%	3,362,344	72,838	2.2%	19.6%
4,5	**2017**	672,241	12,473	1.9%	3,434,916	72,572	2.1%	19.6%
4,5	**2018**	682,902	10,661	1.6%	3,507,503	72,587	2.1%	19.5%
4,5	**2019**	692,462	9,561	1.4%	3,580,081	72,578	2.0%	19.3%
4,5	**2020**	701,464	9,002	1.3%	3,652,547	72,466	2.0%	19.2%
4,5	**2021**	709,181	7,716	1.1%	3,725,094	72,547	1.9%	19.0%

SOURCES

[1] Utah State Office of Education, October 2011 Clearinghouse student unit record collection

[2] Utah Population Estimates Committee @ http://governor.utah.gov/dea/projections.html/PopulationbyAreaandComponent.xls, retrieved Nov 15 2011

PROJECTIONS

[3] Common Data Committee (county-level single-year enrollment projections model), Nov 1 2011

[4] Governor's Office of Planning and Budget (GOPB), January 2008, retrieved Nov 5 2011:
Implied school age (5-17) growth rates @ http://governor.utah.gov/dea/ERG/ERG2008/Selected%20Age.xls (Row 1217)

[5] GOPB @ http://governor.utah.gov/dea/ERG/ERG2008/Population%20by%20Area%20and%20Component.xls (tab "Population" row 42), retrieved Nov 17 2011

Student-Teacher Ratios
FY 2011

Local Education Agencies	Median Student-Teacher Ratio
Alpine	23.69
Beaver	20.44
Box Elder	22.61
Cache	23.16
Canyons	23.39
Carbon	20.12
Daggett	15.00
Davis	24.16
Duchesne	18.22
Emery	18.92
Garfield	14.72
Grand	20.17
Granite	23.26
Iron	22.27
Jordan	24.11
Juab	21.80

How Many Teachers Will We Need?

- Total Teachers Model
- New Teachers Model
- What Do We Know? Utah S&D Survey

January 12, 2012

Results of Supply/Demand Survey

Predictive Special Education Personnel Data

FFY 2013-2019

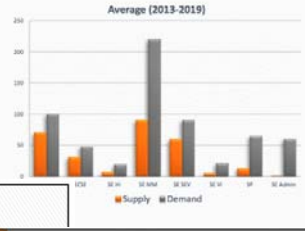
»Purpose of the Survey

> Determine Special Education personnel needs by State, Region, District, and Charter over the next 7 years

> Determine the ability of the Institutions of Higher Education in providing those personnel

> Inform state level projects and activities

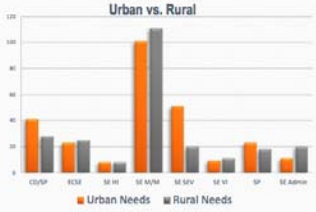
Average Needs



District Needs vs. Charter Needs

Districts vs. Charters

District Needs
Urban vs. Rural



Regional Needs (5 Regions)

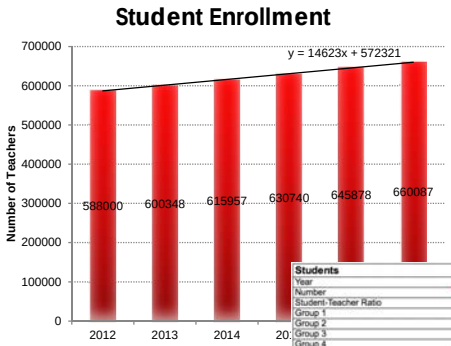
- North Region: Box Elder, Logan, Cache, Rich, Weber, Ogden, Morgan, Davis, North Summit
- North-West Region: Tooele, Salt Lake, Granite, Park City, South Summit, Murray, Jordan, Canyons, Alpine, Wasatch, Provo, Nebo
- Mid-West Region: Tintic, Juab, North Sanpete, Millard, South Sanpete, Sevier
- South-West Region: Beaver, Piute, Wayne, Iron, Ga Washington, Kane
- East Region: Daggett, Duchesne, Uintah, Carbon, E San Juan

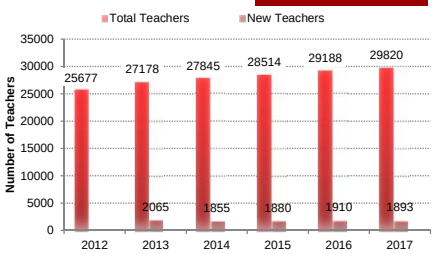
Regional Needs

	North	North-West	Mid-West	South-West	East
CD/SP Communication Disorders/Speech Pathology	18	29	6	9	7
ECSE Special Education (Birth-5)	10	18	5	10	5
SE HI Special Education Hearing Impaired (Deaf)	4	5	2	2	3
SE M/M Special Education Mild/Moderate	48	70	28	35	31
SE SEV Special Education Severe	19	26	9	9	8
SE VI Special Education Visually Impaired	5	7	3	3	2
SP School Psychologist	10	16	6	6	3
SE Admin Special Education Administration	9	8	5	3	6

Total Teachers—The Easy Part

- Student Enrollment Model
- Student-Teacher/Case Loading Inputs





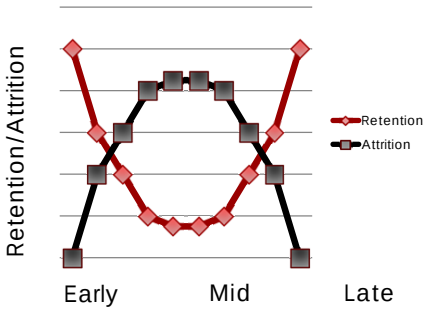
Students	Urban	2013	2014	2015	2016	2017
Year	2012					
Number	588000					
Student-Teacher Ratio	22.9					
Group 1		22.9	22.9	22.9	22.9	22.9
Group 2		22.9	22.9	22.9	22.9	22.9
Group 3		22.9	22.9	22.9	22.9	22.9
Group 4		15	15	15	15	15
0						
0						
0						
0						
0						
0						
Annual Enrollment Change	-	2.1%	2.6%	2.4%	2.4%	2.2%

New Teachers—The Bigger Challenge

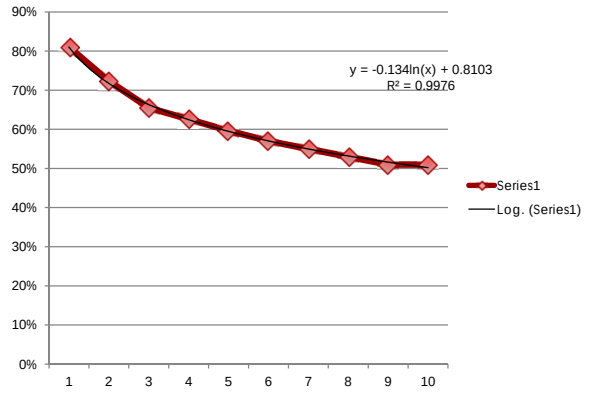
- Teacher Attrition—Modeling Human Behavior
  - Best predictor of future behavior is…
- Age
- Experience
  - Early Career
  - Mid-Career
  - Late Career
- Urban-Rural
- Location
- Subject/Students

The Under Armour ™ Curves

- Early career
- Mid career
- Late career



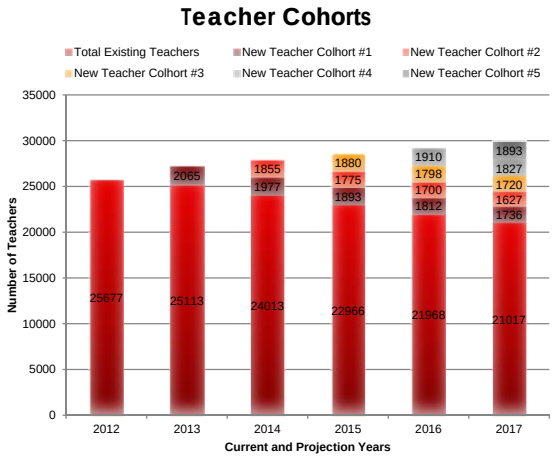
Group Retention



Cohort Attrition and New Teacher (Cohorts) Needed

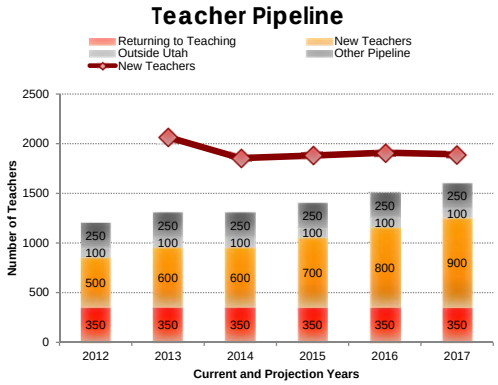
	Current Year	Projection Years				
		1	2	3	4	5
	2012	2013	2014	2015	2016	2017
Student Enrollment	588000	600348	615957	630740	645878	660087
Existing Teacher Cohort						
Group 1	1530	1469	1351	1243	1144	1052
Group 2	11329	11046	10493	9969	9470	8997
Group 3	10132	9980	9681	9390	9108	8835
Group 4	2686	2619	2488	2364	2245	2133
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
Total Existing Teachers	25677	25113	24013	22966	21968	21017
Students Served-Total Existing Teachers	588000	554409	530250	507243	485328	464447
Additional Students to Serve-Cohort #1		45939				
New Teacher Colhort #1						
Group 1	1530	100	92	85	78	72
Group 2	11329	900	855	812	772	733
Group 3	10132	900	873	847	821	797
Group 4	2686	165	157	149	141	134
0		0	0	0	0	0
0		0	0	0	0	0
0		0	0	0	0	0
0		0	0	0	0	0
0		0	0	0	0	0
0		0	0	0	0	0
NewTeachers Cohort #1		2065	1977	1893	1812	1736
Students Served-Cohort #1		45985	44029	42164	40386	38689

New Teacher Cohorts



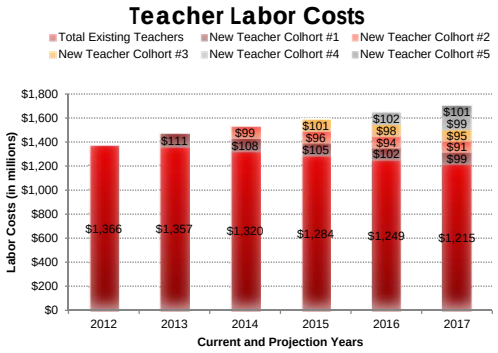
Teacher Shortages/Excesses

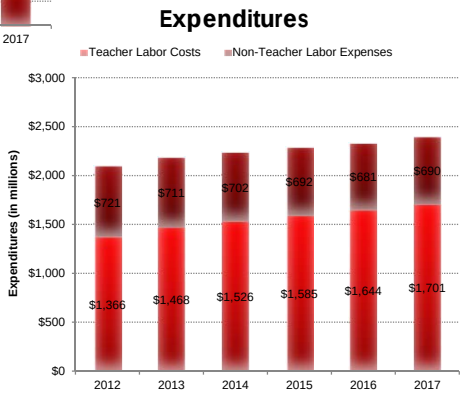
- Is There A Teacher Shortage or Excess?
  - It Depends...
- Teacher Preparation
- To Recruit or To Retain, That Is the Question.



What's The Bottom Line?

- Teacher Labor
  - Salary
  - Benefits
  - Annual Increases
- Total Expenditures
  - PPE – Per Pupil Expenditures
- Bottom Line - $

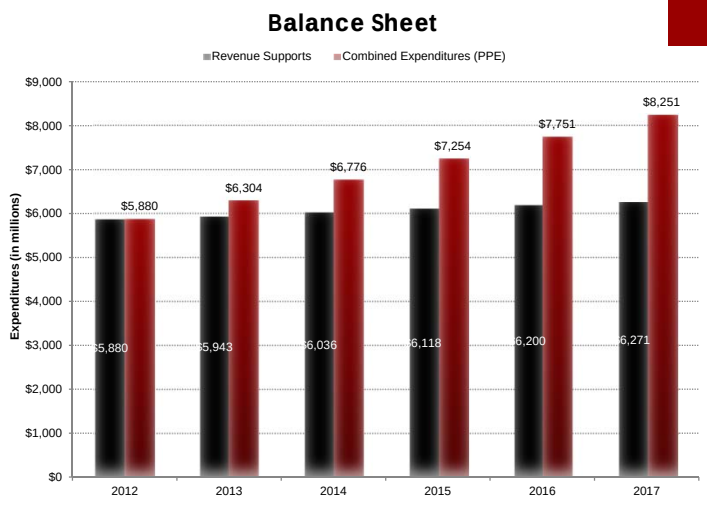




Revenue and Expenditures

Revenue Supports						
Year	2012	2013	2014	2015	2016	2017
Federal ($/Student)	$2,500	$2,400	$2,300	$2,200	$2,100	$2,000
State ($/Student)	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000
Local ($/Student)	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Other Amount ($/Student)						
Total Amount ($/Student)	$10,000	$9,900	$9,800	$9,700	$9,600	$9,500
Per Pupil Expenditures (PPE)						
	0	1	2	3	4	5
PPE #1	$10,000	$10,500	$11,000	$11,500	$12,000	$12,500
PPE #2						
PPE #3						
PPE #4						
Total PPE	$10,000	$10,500	$11,000	$11,500	$12,000	$12,500

Bottom Line



What If

- Economic Realities Change
  - Class Sizes/Case Loadings
  - Related Services
- Enrollment Changes Direction
  - Up: Need more teachers
  - Down: Need fewer teachers
- Teachers Retire Older
  - Higher labor costs
  - Fewer opening for new teachers
  - The "Age Cliff"
- We Hire More Mid-Career Teachers
  - Better retention
  - Lower Costs to Recruit and Train
- We Can't Find Enough Teachers?
  - Substitutes/Waivers
  - Train more
- What If…..

Best Case/Likely Case/Worst Case

- Some Things Go Better Than Anticipated
  - Very good economy
  - Enrollment follows predictable patterns
  - Funding available to innovate education
  - "Normal" teacher distribution
- Things Go Pretty Much As Anticipated
- Perfect Storm!
  - Worst economy on record
  - Rapidly changing enrollment: Increases, decreases, spikes
  - "Sequester" hits education funding
  - Teacher distribution skewed

Student-Teacher Supply and Demand Model

(February 7-8, 2013)

LANGE research·evaluation

b.lange@langeresearch.com