



Assessment of Special Education and
Limited English Proficient Populations
in Massachusetts Charter Schools

Worcester Polytechnic Institute
Graduate Qualifying Project
Supplemental Appendix L
Spring 2007

By

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APPENDIX L: STATISTICAL ANALYSIS OF AGGREGATE SPED AND LEP POPULATIONS

This Appendix is meant to supplement Figure 21 with the addition of a statistical analysis of the aggregate data for both SPED and LEP populations for charter schools statewide. Figure 21 is reproduced below for convenience:

Figure 21: Total Student, SPED, and LEP Population Summary

	2004-2005		2005-2006		2006-2007	
	Count	%	Count	%	Count	%
Total Students						
State-wide	975,911		972,371		968,661	
Non-Charter	955,652	97.9%	950,505	97.8%	945,415	97.6%
Charter	20,259	2.1%	21,866	2.2%	23,246	2.4%
SPED Students						
State-wide	121,160	12.4%	124,883	12.8%	127,535	13.2%
Non-Charter	118,886	12.4%	122,407	12.9%	124,802	13.2%
Charter	2,274	11.2%	2,476	11.3%	2,733	11.8%
LEP Students						
State-wide	49,860	5.1%	54,503	5.6%	59,050	6.1%
Non-Charter	49,085	5.1%	53,727	5.7%	58,083	6.1%
Charter	775	3.8%	776	3.5%	967	4.2%

Utilizing the equations outlined in the **Statistical Methodology** section, it can be shown that in all cases the null hypothesis would be rejected at the 5% significance level, indicating that both SPED and LEP populations are under-represented in charter schools at an aggregate level. Note that a 95% confidence interval (around \bar{p}_1) has also been calculated and it yields identical results (only the high-end is pertinent and in all cases falls well below \bar{p}_2).

	2004-2005		2005-2006		2006-2007	
	SPED	LEP	SPED	LEP	SPED	LEP
\bar{p}_1	11.2%	3.8%	11.3%	3.5%	11.8%	4.2%
\bar{p}_2	12.4%	5.1%	12.9%	5.7%	13.2%	6.1%
\hat{p}	0.12415	0.05109	0.12843	0.05605	0.13166	0.06096
$\hat{\sigma}_{\bar{p}_1 - \bar{p}_2}$	0.00234	0.00156	0.00229	0.00157	0.00224	0.00159
z-stat	-5.19251	-8.38522	-6.79320	-13.37016	-6.43226	-12.48908
p-value	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Reject H_0 ?	Yes	Yes	Yes	Yes	Yes	Yes
95% CI (high)	11.6%	4.1%	11.7%	3.8%	12.1%	4.4%
Reject H_0 ?	Yes	Yes	Yes	Yes	Yes	Yes