Berkshire Wireless Learning Initiative Year 3 Evaluation Results

December 2008 Interim Summary

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This interim report serves as an overview and introduction to the Year 3 Berkshire Wireless Learning Initiative student results. Currently, the Boston College research team is analyzing three years of teacher and student survey data collected across five 1:1 laptop settings and two comparison sites where 1:1 technology did not exist. In addition, we are exploring the different uses of student and teacher technology use with measures of student achievement. The final report will be issued on or before March 31, 2009.

In summary, the program was highly successful at changing the learning environment in the majority of classrooms across the participating schools. Teachers, students and principals nearly universally reported substantial changes in the way teachers taught and students learned with the addition of teacher and student computers. Across all grade levels and subject areas teachers' and students' use of technology increased dramatically and quickly following the student deployment of laptops. In addition, student and teacher surveys show that students and teachers were using their laptops for a wide variety of educational objectives and goals. However, each of the schools implemented the BWLI program in their own unique ways, as was fitting to each schools culture, resources and staffing.

Different implementations at different schools and grade levels led to different types of uses, concentrations, and specializations. We are now in the process of determining how these different uses and patterns impacted teacher attitudes, student use of technology, and measures of student achievement. The tables and charts below document students' use of technology during the third and final studied year of the BWLI implementations. At the end of this document is a summary of the computer writing study results and an example of our student achievement analyses for Year 3.

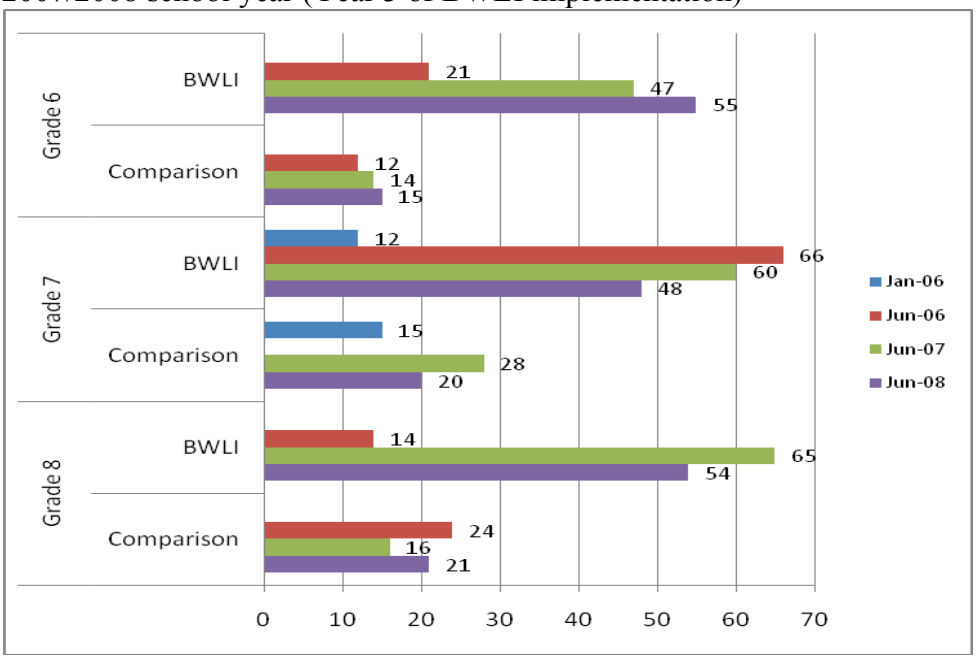
Summary of Year 3 student survey results

Student use of technology in school

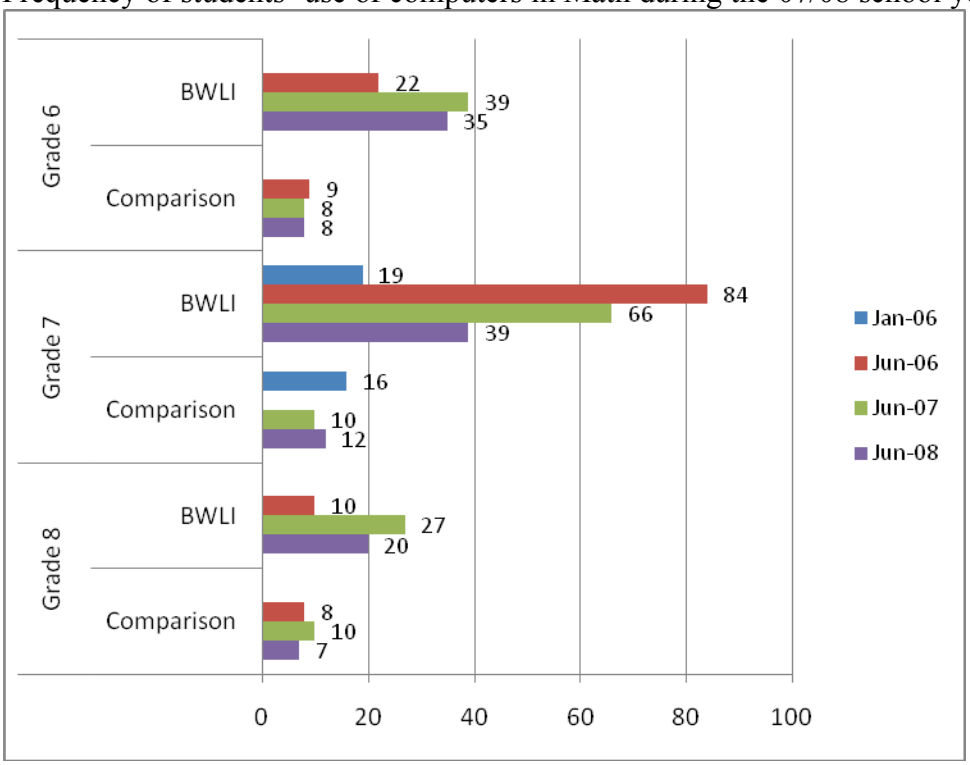
Mean # of times students report using technology in classrooms during 07/08 school year

	Grade 6	Grade 7	Grade 8
Conte	111	79	110
Herberg	86	89	97
Reid	84	102	82
St. Joseph	-	-	3
St. Mark	90	137	-
North	23	20	22
South	13	23	21

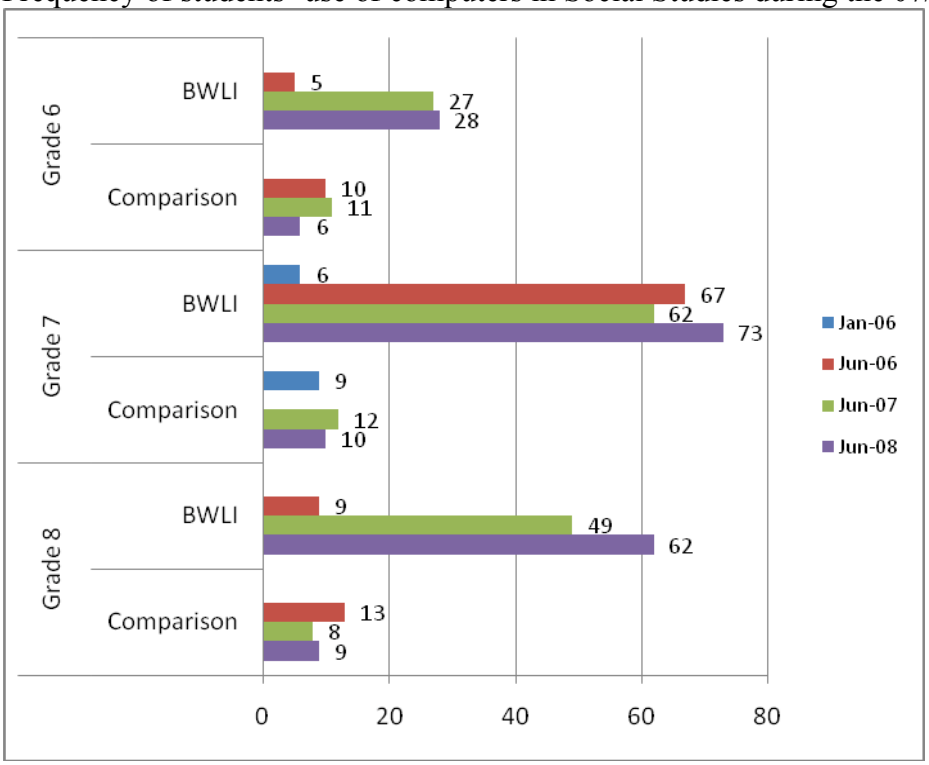
Frequency of students' use of computers in Reading/English Language Arts during the 2007/2008 school year (Year 3 of BWLI implementation)



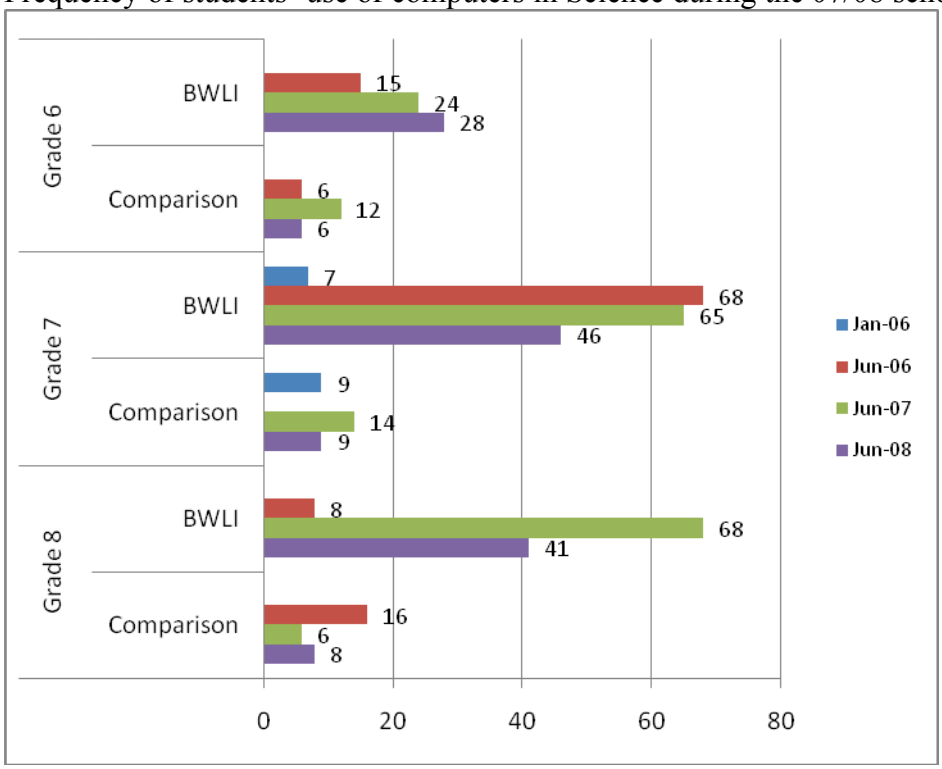
Frequency of students' use of computers in Math during the 07/08 school year



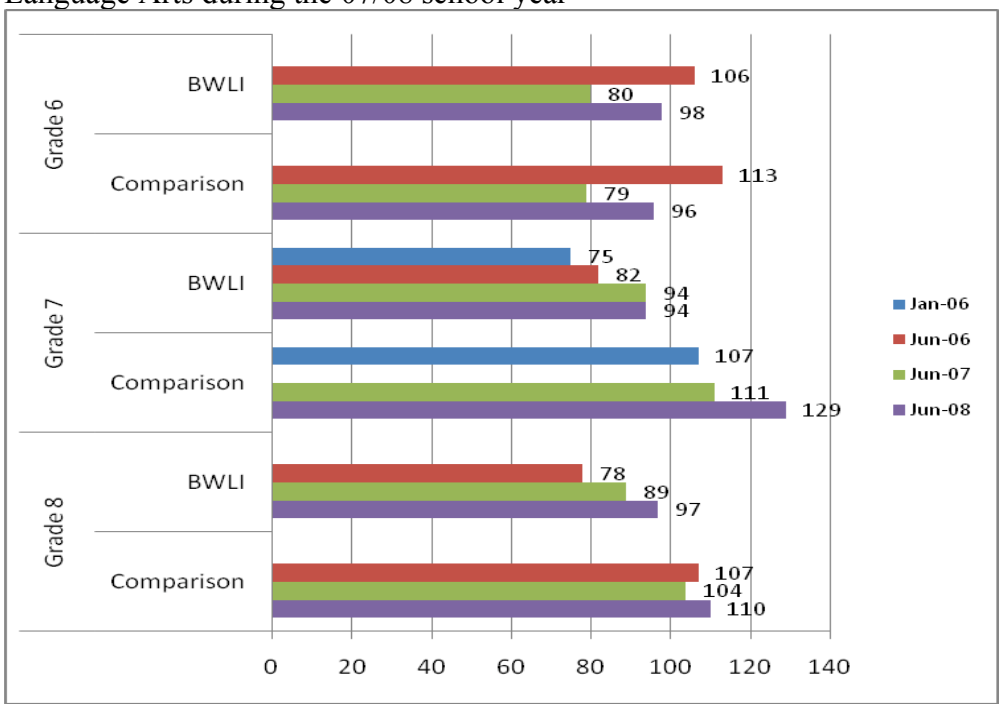
Frequency of students' use of computers in Social Studies during the 07/08 school year



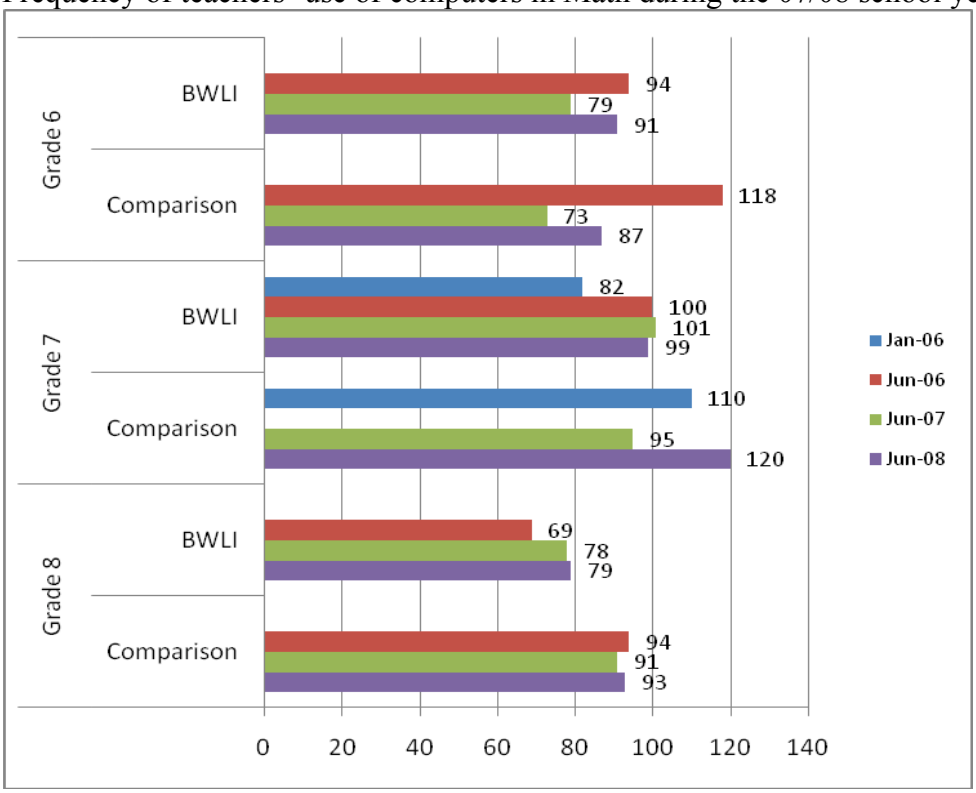
Frequency of students' use of computers in Science during the 07/08 school year



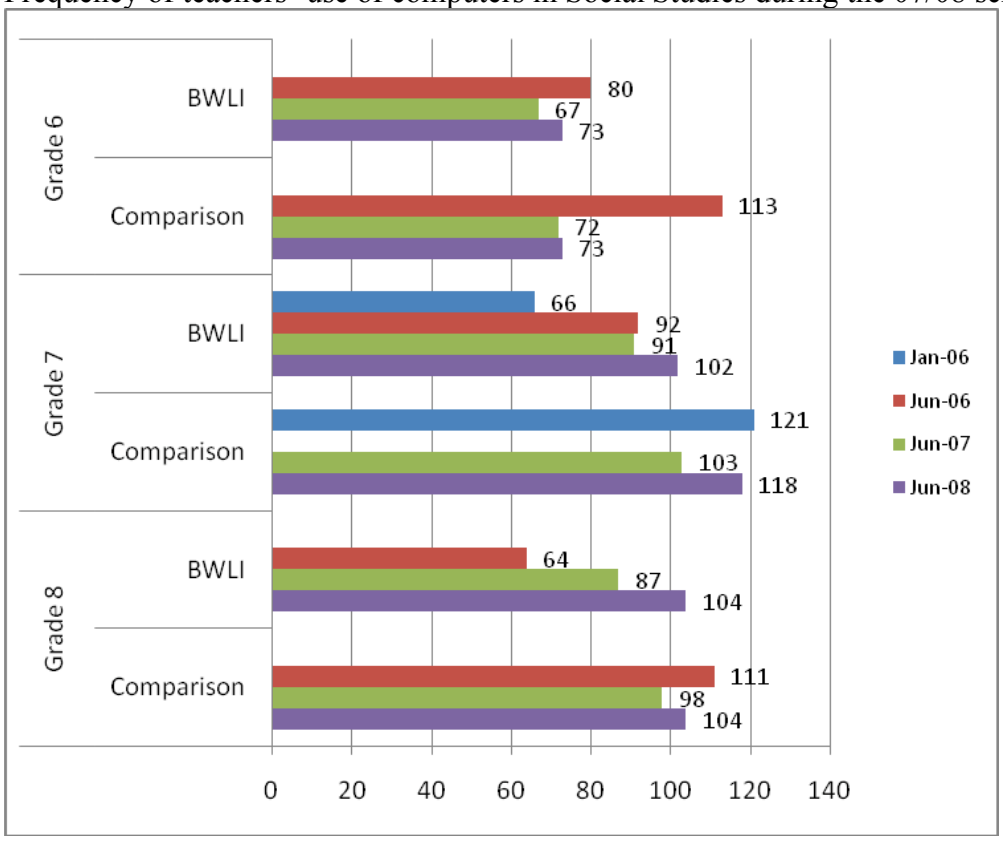
Frequency of teachers' use of computers (as reported by students) in Reading/English Language Arts during the 07/08 school year



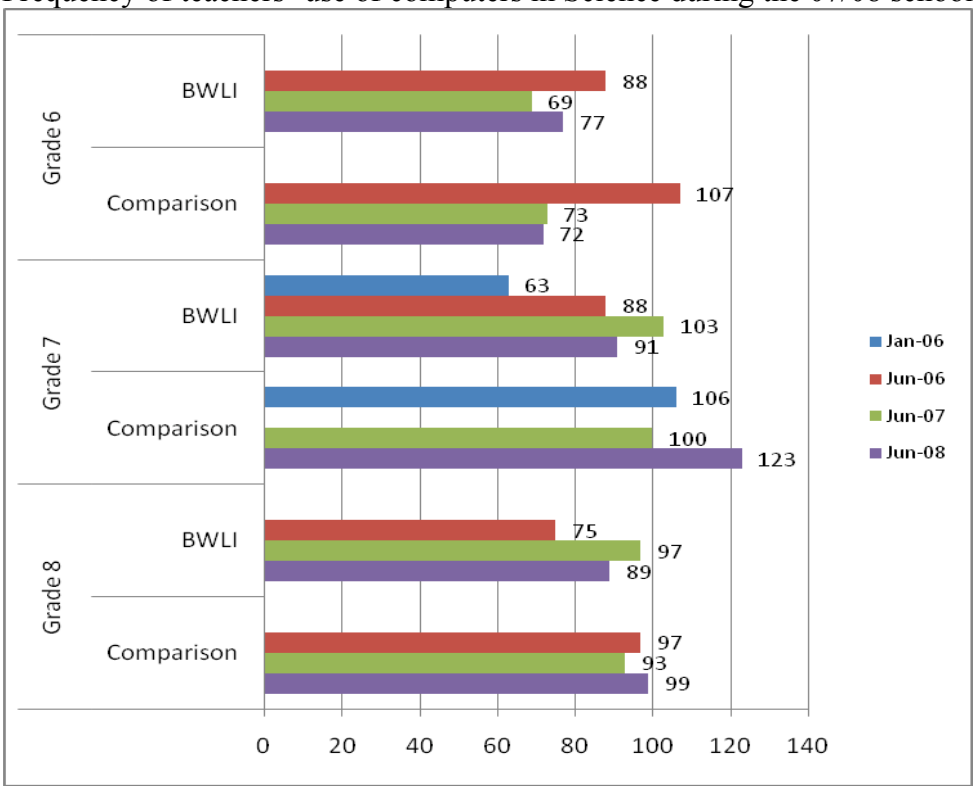
Frequency of teachers' use of computers in Math during the 07/08 school year



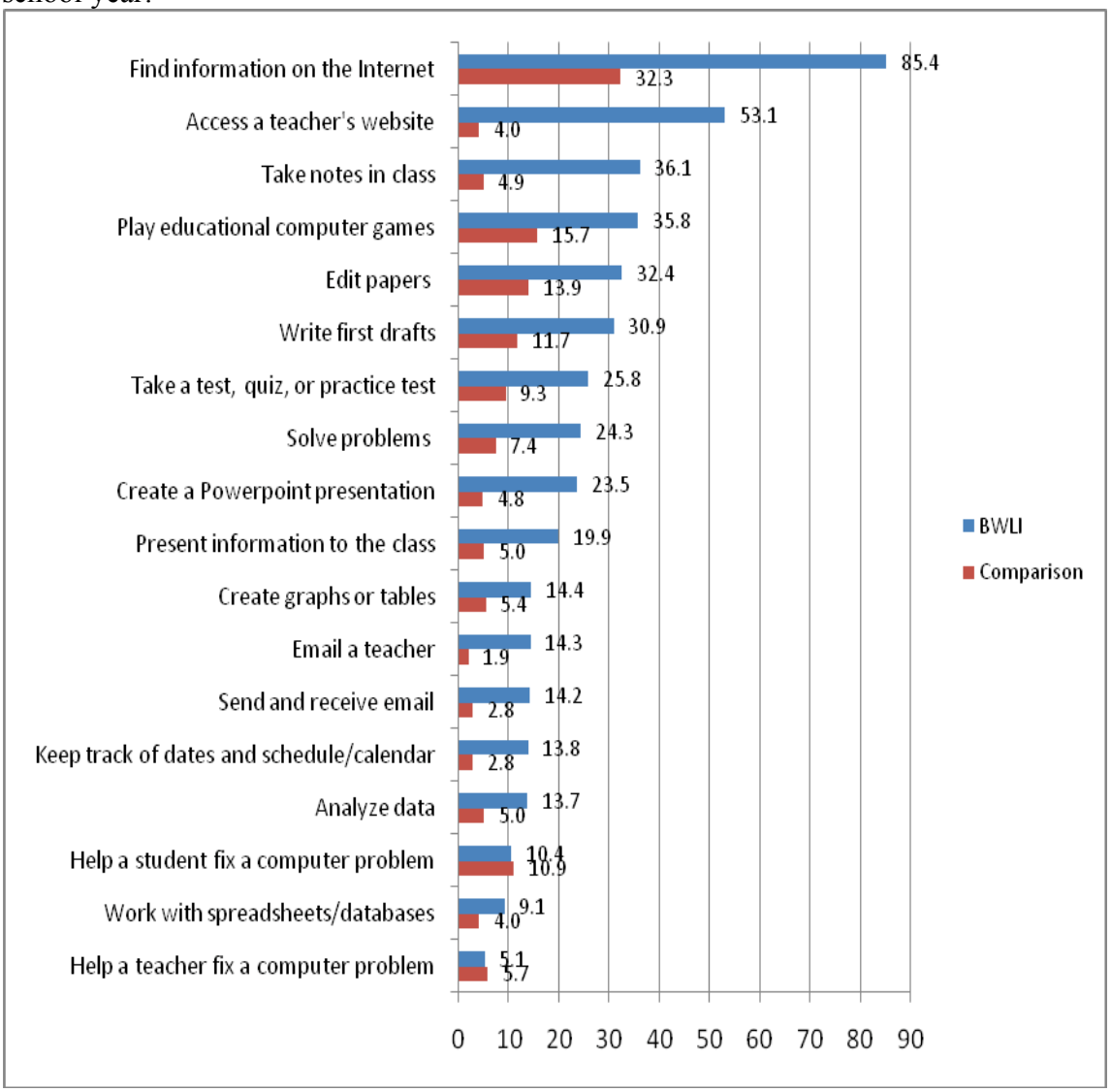
Frequency of teachers' use of computers in Social Studies during the 07/08 school year



Frequency of teachers' use of computers in Science during the 07/08 school year



Comparison of the frequency of students' various computer uses during the 2007/2008 school year:



All differences are significant at $p < .0005$, except "Help a student fix a computer problem" ($p = .546$) and "Help a teacher fix a computer problem" ($p = .648$).

How often did your laptop need to be fixed or repaired?

	Conte	Herberg	Reid	St. Joseph	St. Mark
Never	64%	63%	62%	78%	75%
Once	20%	19%	21%	9%	15%
Twice	8%	10%	8%	4%	5%
Three times	2%	4%	4%	0%	1%
More than 3 times	5%	5%	5%	9%	4%
Mean	0.64	0.69	0.70	0.52	0.44
Percent saying more than once:	15%	19%	17%	13%	10%

Having a laptop in school made learning new things easier.

	Conte	Herberg	Reid	St. Joseph	St. Mark
Strongly agree	39%	42%	36%	44%	37%
Agree	32%	35%	35%	22%	49%
No difference	19%	16%	21%	30%	4%
Disagree	3%	2%	2%	0%	3%
Strongly disagree	7%	5%	6%	4%	7%
Mean	2.08	1.92	2.08	2.00	1.92
% SA/A	71%	77%	71%	66%	86%

Having a laptop in school made learning new things more fun.

	Conte	Herberg	Reid	St. Joseph	St. Mark
Strongly agree	45%	49%	46%	44%	45%
Agree	31%	30%	29%	30%	38%
No difference	17%	15%	17%	22%	11%
Disagree	1%	2%	2%	4%	3%
Strongly disagree	6%	5%	7%	0%	4%
Mean	1.93	1.85	1.95	1.87	1.84
% SA/A	76%	79%	75%	74%	83%

Having a laptop in school made learning new things more challenging.

	Conte	Herberg	Reid	St. Joseph	St. Mark
Strongly agree	7%	7%	5%	0%	10%
Agree	13%	12%	10%	4%	11%
No difference	34%	30%	33%	61%	18%
Disagree	24%	27%	26%	22%	34%
Strongly disagree	22%	25%	25%	13%	28%
Mean	3.38	3.52	3.55	3.43	3.61
% SA/A	20%	19%	15%	4%	21%

Comparison of 7th grade results for students completing an MCAS essay using their BWLI laptop or traditional paper/pencil

		Topic Score	Conventions Score	Word Count	n
Conte	**Computer**	7.0	5.6	517	50
	Paper	6.6	4.7	309	26
Herberg	**Computer**	7.0	5.5	324	144
	Paper	7.3	5.9	336	45
Reid	**Computer**	7.6	5.7	366	85
	Paper	6.0	4.9	257	56
St. Mark	**Computer**	7.9	6.1	545	30
	Paper	6.9	5.9	362	14
ALL	**Computer**	**7.2**	**5.6**	**388**	**310**
	Paper	**6.6**	**5.3**	**302**	**141**

Percent change in MCAS performance levels from 2006 6th grade administration to 2008 8th grade

	ELA			Math		
	Improved	Stayed the same	Decreased	Improved	Stayed the same	Decreased
Conte	25%	71%	4%	33%	62%	5%
Herberg	36%	55%	9%	18%	67%	15%
Reid	32%	64%	11%	19%	68%	19%
North	21%	72%	6%	26%	68%	6%
South	20%	68%	12%	14%	67%	18%
BWLI schools	32%	59%	9%	21%	64%	15%
Comparison Schools	21%	70%	9%	20%	68%	12%

Although our analyses of student achievement has many facets and will take months of further analyses, the above table shows changes in students' performance levels (Advanced, Proficient, Needs Improvement, and Warning) between the 2006 6th grade administration and the same cohort of students two years later as 8th graders in 2008. This simple analysis of the state test performance suggests improvements in student performance at the BWLI schools during the time when student were exposed to 1:1 computing, particularly in ELA. This degree of improvement was not observed across the comparison schools.