

Summary of Data Collection Procedures/Timeline for the BWLI Evaluation

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Boston College researchers, Damian Bebell and Mike Russell are providing contracted evaluation services for the Berkshire Wireless Learning Initiative, a state (MA) funded pilot program investigating the effects of increased technology in traditional middle schools. The BWLI is a Berkshire County pilot program chartered to help evaluate a 1:1 approach of using laptop computers and wireless communication to transform teaching and learning across four middle schools. A total of six public middle schools are participating in the program evaluation (4 schools receiving increased technology; 2 serving as control groups). As a pilot program, the Berkshire Wireless Learning Initiative is making evaluation a focal point of its work, with the goal of providing meaningful data to Berkshire County, the state, as well as to the greater educational community.

The Berkshire Wireless Learning Initiative provides a unique opportunity to document the effects of 1:1 computing on teaching and learning using a variety of methodological techniques that overcome many common methodological challenges and shortcomings. A research team led by Damian Bebell and Mike Russell of Boston College's Technology and Assessment Study Collaborative (inTASC) will implement an evaluation plan that assesses the immediate impacts of technology on classroom practices, using both qualitative and quantitative approaches. These methods will include establishing baseline data and measuring changes. Specifically, the evaluation aims to capitalize on the research opportunities inherent in the three-year technology deployment of the BWLI schedule. Examining different grade levels (6-8) through a series of naturally occurring pre/post and comparison examinations encompass the evaluation design mirroring the deployment of 1:1 student laptops at the four BWLI schools over the three years of the study.

Specifically, the evaluation of the BWLI will measure how successfully the program achieves the following targeted outcomes:

1. Enhanced student achievement as shown through *preexisting test scores, grades, teacher survey data and assessments aggregated at the classroom and school levels*;
2. Improved student engagement as shown *through teacher and student survey data, student drawings, attendance data, disciplinary data, and potentially classroom observation*;
3. Fundamental paradigm changes in teaching strategies, curriculum delivery, and classroom management as shown through *teacher and student survey data, student drawings, and classroom observation*; and
4. Enhanced capabilities among students to conduct independent research, and collaborate with peers as shown through *teacher and student survey data, student drawings, and classroom observations*

The evaluation design will provide meaningful data concerning the immediate impacts of the technology on classroom practices. The evaluation design also addresses a number of the more far-reaching goals of the program by examining the impacts of the technology on student achievement and on more nuanced educational impacts using both qualitative and quantitative approaches. Specifically, the evaluation team will use a series of teacher surveys, selected teacher interviews, student surveys, student drawings, analysis of existing school records, and qualitative classroom observations to document and track the impacts of 1:1 computing on teaching and classroom practices. Student achievement measures will also be examined through the secondary analysis of MCAS test data in the three participating public BWLI schools and two comparison sites through a non-equivalent comparison group study. An additional student writing assessment is being designed specifically for this project that will allow students to utilize the laptops when composing and editing a short essay.

Data Collection Procedures

Procedure	Description	Outcome(s)
Student Survey	Web-based student surveys will be given to every BWLI student before they experience 1:1 computing (Pre) and again near the end of each 1:1 school year (Post)*.	1, 2, 3, 4
Teacher Survey	Web-based teacher surveys will be given to every BWLI teacher before their students experience 1:1 computing (Pre) and again near the end of each 1:1 school year (Post)*.	1, 2, 3, 4
Student Drawing	A student drawing exercise will ask BWLI students to reflect on “writing in school” through an open ended drawing exercise before they experience 1:1 computing (Pre) and again near the end of each 1:1 school year (Post).	2, 3, 4
Classroom Observation	Trained undergraduate and graduate MCLA students will conduct pre-arranged visits to observe and record technology practices in pre-selected 1:1 classrooms.	2, 3, 4
MCAS Analysis	BC researchers will access item-level MCAS results for each 1:1 BWLI student to determine the impacts of various technology practices (as measured in the student and teacher surveys) on standardized test performance*.	1
Writing Assessment	1:1 BWLI students will participate annually in a short computer-based writing assessment to determine the impacts of technology practices (as measured in the student and teacher survey) on writing length and quality*.	1
Teacher Interviews	At various intervals across the deployment of 1:1 student laptops, BWLI teachers may participate in short informal interviews regarding their progress and attitudes towards the program.	2, 3, 4
Principal Interviews	At various intervals across the deployment of 1:1 student laptops, BWLI principals may participate in short informal interviews regarding their progress and attitudes towards the program	1, 2, 3, 4
Use of Existing Data	We will meet with each school to determine what data already collected by the school or district could be analyzed to show impacts of 1:1 computing. Specifically, we will seek attendance/tardiness data, disciplinary records (detentions, referrals, etc.) and student grades.	1, 2, 3

** Indicates that comparison group (i.e. non 1:1) students/teachers are also participating*

Timeline of BWLI Evaluation

Given the variety of data collection procedures and the staggered deployment schedules over the three grade levels, we have created a master timeline for the BWLI Evaluation of the 2005-2006 school year. Months are presented vertically, while a breakdown for each school grade level runs horizontally. Blue boxes indicate a 1:1 environment for a given grade level and the various data collection techniques are placed within the calendar for each grade level at each school. April is highlighted for MCAS testing.

2005-2006 School Year:

KEY:

		05-06 School year										
		Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Summer-06
SCHOOL	GRADE											
Conte	6									SS TS		
Conte	7				SD SS	TS	TI QO		QO	SS TS	TI SD	SR
Conte	8									SS TS	SD	SR
Herberg	6									SS TS		
Herberg	7				SD SS	TS	TI QO		QO	SS TS	TI SD	SR
Herberg	8									SS TS	SD	SR
Reid	6									SS TS		
Reid	7				SD SS	TS	TI QO		QO	SS TS	TI SD	SR
Reid	8									SS TS	SD	SR
St. Mark	6									SS TS		
St. Mark	7				SD SS	TS	TI QO		QO	SS TS	TI SD	SR
St. Mark	8									SS TS	SD	SR
MCAS												

School Record Analysis: SR

Qualitative Observations: QO

Student Drawing: SD

Student Survey: SS

Teacher Interviews: TI

Teacher Survey: TS

A timeline of the student and teacher surveys (for all three years of the project evaluation) is highlighted below:

Teacher Survey					
05-06 School Year		06-07 School Year		07-08 School Year	
Grade 6		Pre		Pre	
Grade 7	Pre	Post		Post	Post
Grade 8		Pre		Post	Post

Student Survey					
05-06 School Year		06-07 School Year		07-08 School Year	
Grade 6		Pre		Pre	Post
Grade 7	Pre	Post		Post	Post
Grade 8		Pre		Post	Post

2006-2007 School Year:

		Light Blue= 1:1 Student Laptops 06-07 School year										
SCHOOL	GRADE	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Summer 07
Conte	6									SS TS	SR SD	SR
Conte	7			QO		QO		QO		SS TS SR TI SD		SR
Conte	8				QO		QO		QO			SR
Herberg	6									SS TS	SR SD	SR
Herberg	7			QO		QO		QO		SS TS SR TI SD		SR
Herberg	8				QO		QO			SS TS SR TI SD		SR
Reid	6									SS TS	SR SD	SR
Reid	7			QO		QO		QO		SS TS SR TI SD		SR
Reid	8				QO		QO			SS TS SR TI SD		SR
St. Mark	6									SS TS	SR SD	SR
St. Mark	7									SS TS SR TI SD		SR
St. Mark	8									SS TS SR TI SD		SR

2007-2008 School Year:

		Light Blue= 1:1 Student Laptop 07-08 School Year										
SCHOOL	GRADE	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Summer 08
Conte	6			QO						SS TS SR TI SD		SR
Conte	7	QO	QO		QO		QO			SS TS SR TI SD		SR
Conte	8		QO			QO				SS TS SR TI SD		SR
Herberg	6			QO						SS TS SR TI SD		SR
Herberg	7	QO	QO		QO		QO			SS TS SR TI SD		SR
Herberg	8		QO			QO				SS TS SR TI SD		SR
Reid	6			QO						SS TS SR TI SD		SR
Reid	7	QO	QO		QO		QO			SS TS SR TI SD		SR
Reid	8		QO			QO				SS TS SR TI SD		SR
St. Mark	6			QO						SS TS SR TI SD		SR
St. Mark	7	QO	QO		QO		QO			SS TS SR TI SD		SR
St. Mark	8		QO			QO				SS TS SR TI SD		SR

KEY:

School Record Analysis: SR
 Student Drawing: SD
 Teacher Interviews: TI

Qualitative Observations: QO
 Student Survey: SS
 Teacher Survey: TS