EETT Grant Evaluation: Year 2 Report
Williamsport Area School District

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Beginning with the school year 2004-2005, the Williamsport Area School District was awarded a two year EETT grant (Funding Cycle 2) designed to support improvement of student achievement in mathematics at the Roosevelt Middle School. This "innovation bundle" included (a) set-up and use of one technology-based I CAN Learn® (ICL®) classroom to be used by the lowest achieving students in grades 7 and 8; (b) instruction and support in differentiation of instruction to meet the needs of all learners and in teaching reading in the mathematics classroom; (c) professional development and support in use of Accelerated Math®; and (d) support in use of these and other technologies (including use of a school-wide CATV system).

This report is a final evaluation focusing specifically on progress made toward attainment of the following performance goals and their related indicators during the second and final year of the grant:

> Performance Goal 1: All 7th and 8th grade students at Roosevelt Middle School will achieve at higher levels on the PSSA mathematics assessment, and particularly on the Algebra and Functions components (Standard 2.8) and the Mathematical Problem-Solving and Communication components (Standard 2.5) administered in the spring of each year.
>
> > Performance Indicator: The percentage of students who achieve Proficient/Advanced on the PSSA mathematics assessment, and who particularly achieve at higher percent of the total points possible on the Algebra and Functions component (standard 2.8) and the Mathematical Problem-Solving and Communication components (standard 2.5) of the PSSA mathematics assessment will increase each year.
>
> Performance Goal 2: All Roosevelt Middle School mathematics teachers will demonstrate growth in attitudes toward and implementation of: integrating technology into curriculum and instruction, differentiating classroom instruction, and teaching reading in the mathematics content area.
>
> > Performance Indicator: The percentage of mathematics teachers who demonstrate growth in attitudes toward and implementation of integrating technology into curriculum and instruction, differentiating classroom instruction, and teaching reading in the mathematics content area will increase by the end of each school year.

Specific Performance Targets related to Year 2 of grant implementation (school year 2005-2006) are as follows[1]:

> Performance Target 1.2: On the 2005-2006 PSSA, 58% of all 8th grade students in Roosevelt Middle School (RMS) will achieve proficiency and/or Advanced in the PSSA mathematics assessment.
>
> Performance Target 1.4: In 2005-2006, 35% of all RMS 8th grade IEP students enrolled in the I CAN Learn® program will achieve at least Basic in the PSSA mathematics assessment.
>
> Performance Target 1.6: In 2005-2006, 68% of RMS 8th grade non-IEP students enrolled in the I CAN Learn® program will achieve proficiency and/or Advanced in the PSSA mathematics assessment.
>
> Performance Target 1.8 (revised[2]): On the 2005-2006 PSSA, 45% of RMS economically disadvantaged 8th grade students enrolled in the I CAN Learn® program will achieve "Proficient" or "Advanced" on the mathematics portion of the PSSA.
>
> Performance Target 1.10 (revised[3]): On the 2005-2006 PSSA, at least 59% of 8th grade students at RMS will achieve "Proficient" or "Advanced" in Algebraic Concepts on the PSSA mathematics assessment.

[1] Performance Targets 1.2, 1.4, 1.6, 1.8, 1.10, 1.12, 2.2 and 2.4 have not been referenced here, since they relate to Year 2 of grant implementation.

[2] This target was revised to conform with increases in other sub-group scores necessary to narrow the achievement gap between sub-group populations and at group as a whole.

Performance Target 1.12: Deleted—data not available.

Performance Target 2.2: By the end of the 2005-2006 school year, 75% of the RMS mathematics teachers will score at the Collaboration Stage in concerns about integrating technology into curriculum and instruction (I CAN Learn® and Accelerated Math®), differentiating classroom instruction, and teaching reading in the mathematics content area, as measured by the Stages of Concern (SoC) scale employed by the Concerns-Based Adoption Model (CBAM).

Performance Target 2.4: By the end of the 2004-2005 school year, 75% of the RMS mathematics teachers will score at the Integration Level in integrating technology into curriculum and instruction (I CAN Learn® and Accelerated Math®), differentiating classroom instruction, and teaching reading in the mathematics content area, as measured by the Levels of Use (LoU) scale as part of the Concerns-based Adoption Model.

The following two sections of this report address progress toward each of the Performance Goals and their related targets. The report concludes with a summary of progress over the two years of implementation of this grant.

Performance Goal 1: Student Achievement in Mathematics

The plan for evaluation of student achievement consisted of collection of baseline data, comprised of an average of 2003 and 2004 scores, and annual scores for 2005 and 2006 from RMS 8th grade PSSA test scores. The baseline and 2005 PSSA scores were reported in the Year 1 report, and this report focuses on progress toward Year 2 Performance Targets.

Methodology and Participants

The district provided individual PSSA mathematics scores for all RMS 8th graders who took the assessments in 2006. Data were analyzed both for the total population (all 8th grade RMS students who took the PSSA) and several sub-populations (ICL® students with IEPs, ICL® students without IEPs, and economically disadvantaged ICL® students). Additionally, evaluators analyzed the 2006 Algebraic Concepts subscore results. Data displays were developed to highlight findings as they related to each of the targets.

Performance Target 1.10 was modified at the conclusion of Year 1 of the grant; however, further modifications were needed, as a consequence of the types of PSSA data provided to districts. These changes will be addressed in greater detail in the findings. In addition, because the Pennsylvania Department of Education no longer provides subscore data related to Mathematical Problem Solving and Communication, Performance Target 1.12 was deleted.

Findings

The following data displays provide end-of-Year-2 data based on the 2005 PSSA scores for RMS 8th grade students and several sub-group populations of these students participating in the I CAN Learn® program. Sub-groups were as follows: ICL® students without IEPs, ICL® students with IEPs, and ICL® students identified as economically disadvantaged. Data displays are presented in sequential order, according to the student achievement Performance Targets listed previously in this report.

Performance Target 1.2

To meet this target, at least 58 percent of all 8th grade students attending Roosevelt Middle School (RMS) were to have achieved either "Proficient" or "Advanced" in the mathematics assessment portion of the 2006 PSSA. On this year's PSSA, 60 percent of RMS 8th grade students met this target; this was an increase of 6 percent over the 2005 assessment. With a 2 percent increase in the number of students achieving at the "Advanced" level and a 4

[3] This target was revised and Performance Target 1.12 was deleted based on recommendations made by the evaluator (see Year 1 evaluation report). This recommendation was submitted to the Metiri Group and, through them, to the Pennsylvania Department of Education.

percent increase in the number of students achieving at the "Proficient" level, Performance Target 1.2 was met, and in fact exceeded, by 2 percent. These findings have been displayed in Table 1.

Table 1.
Students scoring "Proficient" or "Advanced" in mathematics (2006 PSSA)

	Proficient	Advanced	Total Scoring Proficient or Better
N achieving at this level	48	44	92
Percent of total tested	31%	29%	60%
SSM Mean	1360.77	1593.09	
Math Anchor D Mean	13.88	16.91	

Note: SSM is the Scaled Score for Mathematics; Assessment Anchor D is the mean raw score for Algebraic Concepts

Performance Target 1.4

In order to meet Performance Target 1.4 during Year 2, 35 percent of all RMS 8th grade students with IEPs and who were enrolled in the I CAN Learn® program were to have achieved, at a minimum, at the "Basic" level on the mathematics portion of the PSSA. As shown in Table 2, 66 percent of the 8th grade IEP students enrolled in the I CAN Learn® program achieved at least "Basic" in 2006. This represents an increase of 11 percent over the 2005 results. Furthermore, it should be noted that all students in this sub-group achieved at the "Proficient" or "Advanced" levels.

Table 2.
RMS ICL® students with IEPs scoring at least "Basic" in mathematics (2006 PSSA)

	Basic	Proficient	Advanced	Total scoring Basic or Better
N achieving at this level	0	4	2	6
Percent of IEP students in ICL®	--	44%	22%	66%
Percent of total 8th gr. tested	0%	3%	2%	
SSM Mean	--	1378.50	1591.33	
Math Anchor D Mean	--	14.25	17.00	

Note: SSM is the Scaled Score for Mathematics; Assessment Anchor D is the mean raw score for Algebraic Concepts

Performance Target 1.6

To meet this Performance Target in Year 2 of the grant, at least 68 percent of all RMS 8th grade non-IEP students enrolled in the I CAN Learn® program would have to have achieved at the "Proficient" or "Advanced" levels in the PSSA mathematics assessment. Table 3 provides a display showing a total increase of 20 percent over the 2005 results for the non-IEP students in the I CAN Learn® program. These results also point out an increase in the means of the Scaled Scores, indicating that students, on average, are scoring at higher levels within each of the proficiency levels, as well as moving up from one level to the next.

Table 3.
RMS non-IEP students in ICL® scoring "Proficient" or "Advanced" in mathematics (2006 PSSA)

	Proficient	Advanced	Total Scoring Proficient or Better
N achieving at this level	32	16	48
Percent of non-IEP students in ICL®	52%	26%	78%
SSM Mean	1363.69	1543.44	
Math Anchor D Mean	14.00	15.00	

Note: SSM is the Scaled Score for Mathematics; Math Anchor D is the mean raw score for Algebraic Concepts

Performance Target 1.8

This Performance Target was revised with permission of grant administrators at the Pennsylvania Department of Education. For this year, the revised target was to have at least 45 percent of all RMS economically disadvantaged 8th grade students who were also enrolled in the I CAN Learn® program achieve either "Proficient" or "Advanced" on the mathematics portion of the 2006 PSSA. This target was exceeded by 25 percent. This represents an increase by 45 percent over the percentage who met this threshold in 2005. This result is due to an increase by 19 percent of those performing at the "Proficient" level and a 4 percent increase of those performing at the "Advanced" level. Table provides a display of these findings.

Table 4.
RMS economically disadvantaged students in ICL® scoring "Proficient" or "Advanced" in mathematics (2006 PSSA)

	Proficient	Advanced	Total Scoring Proficient or Better
N achieving at this level	27	12	39
Percent of total tested	54%	24%	78%
SSM Mean	1358.11	1516.08	
R28 Mean	14.15	16.92	

Note: SSM is the Scaled Score for Mathematics; Assessment Anchor D is mean raw score for Algebraic Concepts

Performance Target 1.10

Performance Target 1.10 was revised at the end of Year 1 of the grant cycle, setting a goal of at least 59 percent of 8th grade students at RMS achieving at the "Proficient" or "Advanced" levels in Algebraic Concepts on the PSSA. Because of the way in which the state reported scores for the 2006 PSSA, it was not possible to address this Performance Target as written.

Performance Target 1.10 refers to proficiency levels for the Algebraic Concepts subsection (Math Assessment Anchor D) of the PSSA. The subscore provided by the state was in the form of raw scores ranging from zero (0) through nineteen (19). It may be noted that the same reporting format was used in 2003 and 2004, when the subsection was referred to as R28. Another confounding issue when evaluating progress toward Performance Target 1.10 is that the state did not provide "cut scores" for each of the proficiency levels for Algebraic Concepts. This is a logical action (or, more accurately, non-action), since these scores represented only a small sample of questions and statistically were insufficient to determine proficiency or lack thereof.

Furthermore, a closer look at the scores—by arranging them in rank order in descending order along with the students' proficiency level for the Scaled Scores (SSM) of the PSSA—raises other questions that confound the concept of assessing proficiency for Algebraic Concepts. For instance, there were students who scored at the top on the Algebraic Concepts subsection—but were merely in the "Proficient" group on their SSMs, rather than in the

"Advanced" group, as one would have expected. Consequently, one cannot make connections between the identified proficiency levels based on students' SSMs and students' raw scores in the Algebraic Concepts subsection of the PSSA. For these reasons, it makes sense to again revise Performance Target 1.10 as follows:

> *In 2006, Assessment Anchor D (Algebraic Concepts) mean scores of RMS 8th grade students whose total test scores are at "Proficient" and "Advanced" levels will show an increase over the same mean scores in 2005.*

Table 9 provides a display of Assessment Anchor D mean scores for students scoring at each of the proficiency levels on the total mathematics scores. In 2006, the mean score of those students with total mathematics scores (SSMs) in the "Proficient" range increased by +0.12 over mean scores of "Proficient" students in 2005, and the mean score for those students scoring at the "Advanced" level reflected an increase of +0.31 over the mean score of 2005. Similarly, these scores reflected mean scores of +3.52 for "Proficient" students during the two-year baseline period (2003 and 2004 mean) and an increase of +3.08 over the mean scores of "Advanced" students as compared to the baseline mean.

Table 9.
Mean raw scores on Assessment Anchor D of RMS 8th graders
by 2006 PSSA proficiency levels

	Below Basic	Basic	Proficient	Advanced
N at level	30	30	48	44
Percent of N	19%	19%	31%	29%
SSM	1082.00	1225.50	1360.77	1593.09
Mean raw scores for Assessment Anchor D	6.63	10.33	13.88	16.91

Note: SSM is the Scaled Score for Mathematics; Assessment Anchor D is the mean raw score for Algebraic Concepts (maximum possible raw score of 19)

Performance Target 1.12

With approval from the Pennsylvania Department of Education, this target was deleted because this information is no longer reported on the PSSA.

Performance Goal 2: Professional Development

The following section relates to progress by professional educators involved in implementation of the grant during the second year of the two-year cycle. The focus of this segment of the report is on progress toward and/or achievement of Performance Goal 2—RMS mathematics teacher growth in attitudes toward and implementation of integration of technology into instruction, differentiation of instruction to meet the needs of all learners, and teaching of reading in the mathematics classroom.

The Concerns-Based Adoption Model (CBAM) was used as a framework for assessing changes in concerns and levels of use by teachers assigned to the I CAN Learn® classroom over the two-year implementation cycle. CBAM, which is based on the premise that change does not occur at a single moment but, rather, takes place over time, permits developmentally appropriate support during implementation by recognizing that users must be supported in ways that meet their varying needs at different points in time during the implementation process. Two complementary components of the CBAM were used—the Stages of Concern (SoC) survey and the Levels of Use (LoU) focused interview.

As one may recall from the previous discussion of these tools[4], the Stages of Concern survey allows change facilitators to target appropriate professional education and support to teachers at different stages throughout the implementation process. These stages change normally, and roughly in developmental sequence, but at different rates for each individual. When approaching innovations, teachers (as well as change facilitators) tend to progress from concerns that are completely *Unrelated* to the innovation, to those that are related to *Self*, then those related to *Task*, and finally to those having to do with *Impact* on students. The following figure provides paragraph definitions of each of the developmental stages of the SoC survey.

Figure 1.
Stages of Concern about the innovation: Paragraph definitions[5]

IMPACT	**6**	**Refocusing**	The focus is on the exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.
	5	**Collaboration**	The focus is on coordination and cooperation with others regarding use of the innovation.
	4	**Consequence**	Attention focuses on impact of the innovation on clients in his or her immediate sphere of influence. The focus is on relevance of the innovation for clients, evaluation of outcomes including performance and competencies, and changes needed to increase client outcomes.
TASK	**3**	**Management**	Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.
SELF	**2**	**Personal**	Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision-making, and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.
	1	**Informational**	A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner, such as general characteristics, effects, and requirements for use.
	0	**Awareness**	Little concern about or involvement with the innovation is indicated.

The second component of CBAM used in evaluating change was the Levels of Use focused interview. The Levels of Use framework allows change facilitators to diagnose the actual implementation of the innovation (or, as in this case, the "innovation bundle"). Again, educators' non-use or use of an innovation follows a fairly predictable pattern from non-use to renewal. Interview questions address seven categories of use: knowledge, acquiring

[4] For additional background information about CBAM's Stages of Concern (SoC) survey and Levels of Use (LoU) interviews, please refer to the Year 1 Evaluation Report provided to the district in October 2006.
[5] Hall, G.E. & Hord, S.M. (2001). *Implementing Change: Patterns, Principles, and Potholes,* (p. 63). Boston: Allyn & Bacon.

information, sharing, assessing, planning, status-reporting, and performing. Figure 2 describes the 3 stages of non-use and the 5 stages of innovation use in this framework.

Figure 2.
Levels of Use of the innovation[6]

Users	**VI**	**Renewal**	State in which the user re-evaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.
	V	**Integration**	Ste in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.
	IVB	**Refinement**	State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.
	IVA	**Routine**	Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is given to improving innovation use or its consequences.
	III	**Mechanical Use**	State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.
Nonusers	**II**	**Preparation**	State in which the user is preparing for first use of the innovation.
	I	**Orientation**	State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.
	0	**Nonuse**	State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.

Methodology and Participants

Due to budget reductions during Year 2 of the grant, district personnel and the evaluator agreed to focus on professional growth on the part of only those educators using the I CAN Learn® lab. Therefore, data were collected only from the six educators whose teaching assignments included time in the lab and not from other mathematics teachers or the rest of the educators in the school. Table 6 shows the job roles of each of these educators and each individual's involvement in various aspects of the grant that took place during the second year of grant implementation. In addition to their involvement in the ICL® lab, all were implementing two additional components of the innovation bundle, differentiated instruction and teaching reading in the mathematics classroom, both of which had been heavily emphasized by the principal throughout the course of this two-year period. However, at the time of these interviews, none of the six educators was assigned to classrooms that had Accelerated Math®

[6] From Loucks, S.F., Newlove, B.W., & Hall, G.E. (1975). *Measuring Levels of Use of the innovation: A manual for trainers, interviewers, and raters* (pp. 8-9). Austin, TX: Research and Development Center for Teacher Education, The University of Texas.

available, although all were well familiar with the program and some had been past users. Additionally, one teacher was involved in using the CATV system to produce the whole-school problem-solving project, "Tuesday Morning Math," being broadcast into every single homeroom once a week. Consequently, despite not being users of the equipment themselves, all interviewees were beneficiaries of this project tied to improvement of students' problem-solving on the PSSA tests. Use of this technology was not addressed in the evaluation, however, because it was only a minor part of the project.

Table 6.
Involvement in grant-related innovations (SY 2005-2006)

ID	Job Role	I CAN Learn®	Accelerated Math®	Differentiated Instruction	Teaching Reading in Math
R06B	Gr. 6 Math	X		X	X
I68D	Instructional Support	X		X	X
R07K	Gr. 7 Math	X		X	X
R08L	Gr. 8 Math	X		X	X
R07L	Gr. 7 Math	X		X	X
S08S	Gr. 8 Learning Support	X		X	X

Stages of Concern Surveys

Mathematics teachers who worked in the ICL® classroom completed Stages of Concern questionnaires a final time in May 2006. At this time six educators taught at least part of their time in this program. In addition, the two building administrators (the principal, who was retiring at the end of the academic year, and the assistant principal, who was recently promoted to the principalship) completed the Change Facilitator Stages of Concern (CFSoC) questionnaires. Teacher SoC questionnaire data were compiled, and the evaluator added the new data to existing Stages of Concern graphs for each of the teachers. Likewise, the new administrator data were compiled and displayed in their respective Change Facilitator graphs.

Levels of Use Interviews

The evaluator conducted a final site visit and set of individual interviews with the six ICL® teachers. Once again, each interview was taped and lasted from 15 to 25 minutes. Questions addressed each component of the "innovation bundle"—I CAN Learn®, differentiated instruction, teaching reading in the mathematics classroom, and Accelerated Math®. Using plots of each of the 7 LoU reporting categories (knowledge, acquiring information, sharing, assessing planning, status reporting, and performing), the evaluator was able to determine, for each component of the innovation bundle, the new overall LoU for each educator.

Findings

Performance Target 2.2

This Year 2 target was to have at least 75 percent of participating teachers' areas of greatest concern moved up to at least the Stage 5 (Collaboration) level. In May 2006, the SoC questionnaire again was completed by the six teachers involved in ICL® implementation. This target was met.

Figure 3 shows that, by the end of Year 2 of grant implementation, 100 percent of those teachers working in the ICL® lab were focusing on Impact issues. The following comments may be made about this data display:

- All participants' areas of greatest concern were at the level of Impact on students, with five (83 percent) of them expressing greatest concern at the Collaboration stage and one at the Refocusing stage.
- In the case of the individual whose primary concern was at Stage 6 (Refocusing), because the area of secondary concern was at Stage 4 (Consequence), this reflected a keen interest in modifying the program to best meet the

needs of individual students. It was not, as it might appear at first glance, a reflection of displeasure with the program or a desire to abandon this innovation.

- In three cases, Stage 0 (Awareness) was the second highest stage. In users of an innovation, as in the case of these individuals, a high Stage 0 finding indicates a lack of concern about the innovation; this was an appropriate indication that all is proceeding well with implementation.
- In the case of two other educators, the secondary concern was Stage 4 (Consequence) or how to maximize student impact; this concern appropriately corresponded with other Impact level concerns.
- In one instance, a secondary concern for Information appropriately reflected that individual's desire to seek information outside the group that might help to improve the program's effects on students.

Figure 3.
Focus of teacher concerns at end of Year 2 of implementation

Area of Focus	ID	Primary and Secondary Concerns	Description/Interpretation
Focus on Impact on Students	S08S	1st Refocusing 2nd Consequence	The focus is on adapting the program to maximize the program's impact on individual students.
	R07L	1st Collaboration 2nd Consequence	The focus of concerns is on collaborating with others to maximize the program's impact on individual students.
	R07K	1st Collaboration 2nd Awareness	This individual's focus is on collaborating with others to maximize impact on students; the high Stage 0 (Awareness) score in a user of the innovation marks a lack of concerns about the innovation.
	R06B	1st Collaboration 2nd Awareness	This individual's focus is on collaborating with others to maximize impact on students; the high Stage 0 (Awareness) score in a user of the innovation marks a lack of concerns about the innovation.
	R08L	1st Collaboration 2nd Awareness	This individual's focus is on collaborating with others to maximize impact on students; the high Stage 0 (Awareness) score in a user of the innovation marks a lack of concerns about the innovation.
	I68D	1st Collaboration 2nd Information	This teacher is focused on working with others to maximize student impact, but the relatively high Stage 1 (Information) score indicates an ongoing search for information to enhance impact.

Although Change Facilitator Stages of Concern were not addressed in this Performance Target, it may be noted that both the Principal and Assistant Principal indicated in their surveys relative lack of concern about the progress of implementation of this innovation. Their high scores at Stage 0 (Awareness) do not imply that they do not care about the success of the innovation but, rather, that they had other priorities on their minds at the time of administration of this questionnaire.

Performance Target 2.4

To meet the Performance Target, at least 75 percent of the target population, teachers using the ICL® lab, would have to score at the Integration level for the key components of the innovation bundle—integrating

technology into curriculum and instruction (I CAN Learn® and, in some cases, Accelerated Math®), differentiating classroom instruction, and teaching reading in the mathematics content area. Because none of the teachers were assigned to Accelerated Math® classrooms, this piece of the innovation bundle was not counted in assessing progress toward Performance Target 2.4. Nonetheless, this target was not met, despite user reports indicating substantial movement along the developmental continuum of the Levels of Use framework. Figure 4 shows the pattern of use by spring 2006.

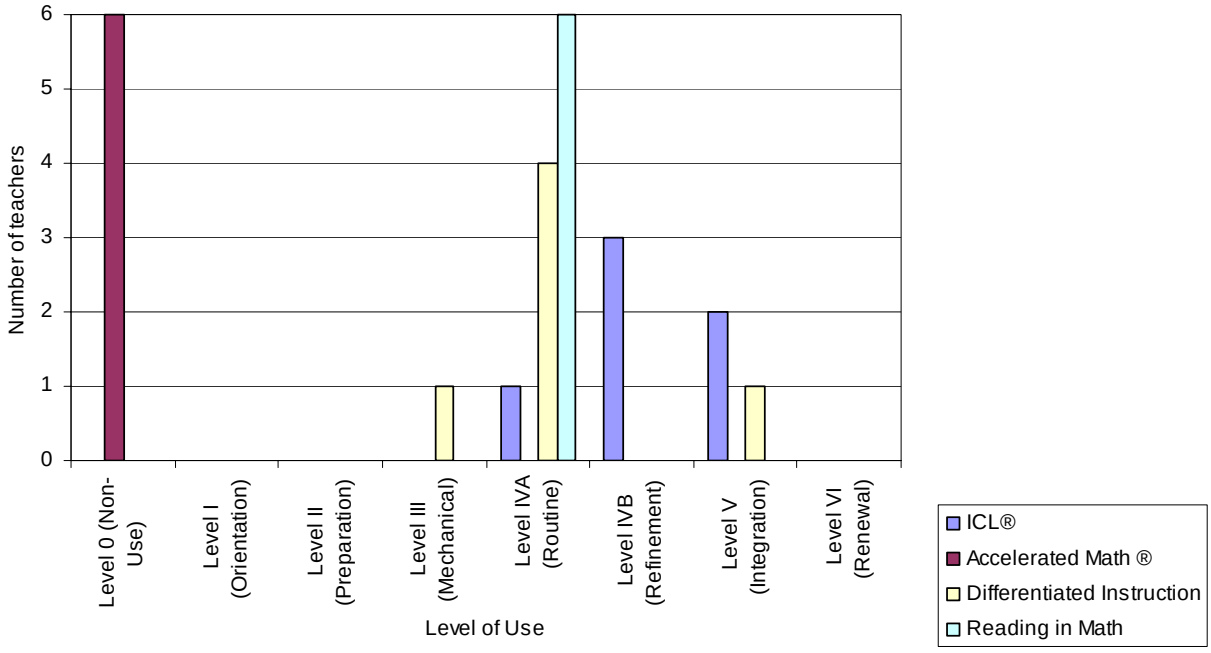

Figure 4.
Number of teachers at each Level of Use for major components of the innovation bundle

The central component of this grant consisted of installation and use of an I CAN Learn® lab at Roosevelt Middle School. All six interviewees' teaching assignments included scheduled time in this lab, although some were scheduled for more time than others. Performance Target 2.4 was to have at least three-quarters of those teachers using ICL® working at the Level V (Integration), based on analysis of one-on-one interview data. This was a very ambitious Performance Target for the end of the second year of implementation of a complex innovation, and this target was not achieved. One may recall that, at the conclusion of Year 1, two teachers were working at Level IVB (Refinement), another five were working at Level IVA (Routine), and two were working at Level III (Mechanical). Analysis of Year 2 interview data indicated that two of the six teachers were functioning at Level V (Integration) level in terms of their use of ICL®, three had moved up to Level IVB (Refinement), and one was working at Level IVA (Routine) (see Figure 4). As such, this represented excellent progress in use of the central component of the innovation bundle in only a two-year period.

As the Figure 4 further indicates, none of the interviewees were currently using Accelerated Math®. It should be noted that the school has a limited number of computer terminals equipped with this technology. Therefore, teacher non-use was not necessarily because these teachers chose not to implement Accelerated Math®, but, rather, because their teaching assignments did not currently include classes in which Accelerated Math® was available as a means of instruction.

Differentiated instruction and teaching of reading in the context of the mathematics classroom were two other components of the innovation bundle supported by this grant. As one may note from Figure 4, differentiation and teaching reading tended to be, at the very least, routine components of these interviewees' instruction. This, too, represents growth in use over that seen at the end of Year 1, when most interviewees were working at Level III (Mechanical) levels and just a few were functioning at Level IVA (Routine) or Level V (Refinement) levels.[7]

Summary of Progress toward Performance Targets

Study of mathematics PSSA scores prior to implementation of this grant (SY 2003 and 2004) showed that, on average, only 42 percent of all Roosevelt 8th grade students had achieved at either "Proficient" or "Advanced" levels, based on their Scaled Scores in Mathematics (SSM) on the PSSA during that time period. By the conclusion of Year 1 of grant implementation, 54 percent of all RMS 8th grade students achieved at either "Proficient" or "Advanced" based on their SSMs on the PSSA—an increase of 12 percent. At the end of Year 2, 60 percent of all RMS 8th grade students achieved at either "Proficient" or "Advanced" levels based on their SSMs on the PSSA—an additional increase of 8 percent over Year 1. Over the two years of project implementation, the percentage of RMS 8th grade students scoring at "Proficient" or "Advanced" increased by 18 percent over the baseline mean. With well over half of RMS 8th grade students scoring at least "Proficient" on the mathematics portion of the PSSA, staff and students alike should be proud of what they have accomplished over a two year period. The following figure displays this change graphically.

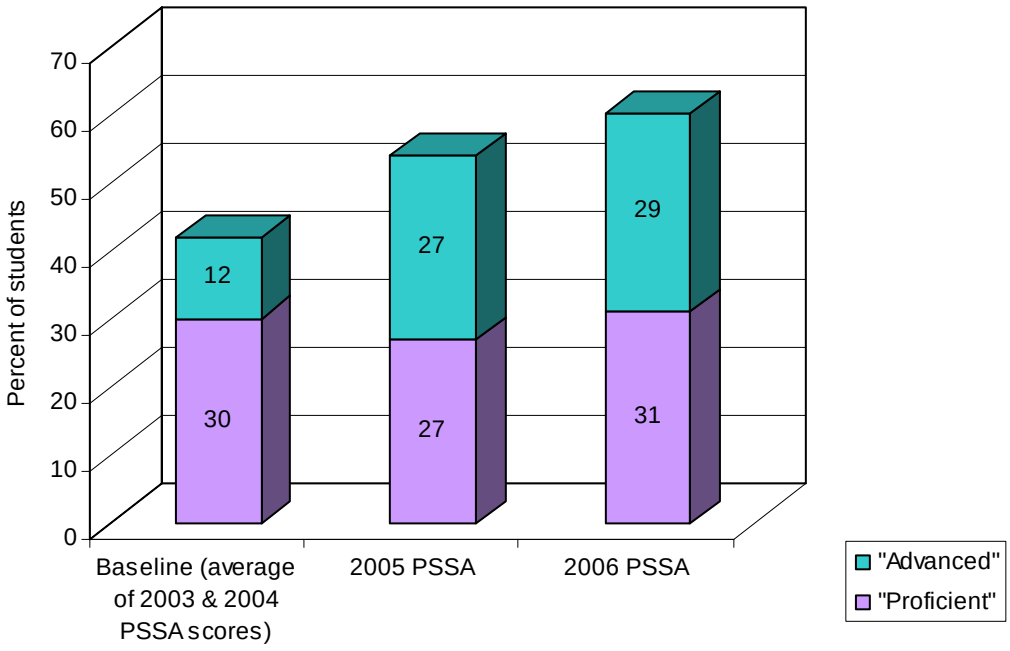

Figure 5.
Change in percentage of all RMS 8th grade students scoring "Proficient" or "Advanced" based on SSMs on the PSSA

[7] It should be noted that in LoU interviews at the conclusion of Year 1, questions about teaching of reading in math were subsumed within questions about differentiation of instruction.

For a school to make the kinds of year-over-year achievement gains required by the No Child Left Behind (NCLB) legislation, students in historically low-achieving subgroup populations must, not only make gains, but must make achievement gains at rates faster than those made by the average population. For this reason, challenging Performance Targets were set for ICL® students as a whole, ICL® students with IEPs, and ICL® students identified as economically disadvantaged. Figure 6 shows the results of the effort to narrow the achievement gap between targeted subgroup populations and all RMS 8th graders[8] by showing percentages of all RMS 8th grade students and the percentages of targeted sub-group populations in the ICL® classroom scoring at or above the "Proficient" level during the two years of the lab's existence.

As the figure shows, students in the ICL® classroom are doing very well as compared to the 8th grade population as a whole. More than 50 percent of both major sub-group populations targeted by this grant achieved at least "Proficient" in terms of their SSMs on the PSSA in 2006. Although two years of data are insufficient to make definitive statements about trend lines of the IEP and economically disadvantaged sub-group populations, there are potentially very exciting patterns being established, where slopes for both of these sub-groups are greater than those of either the population as a whole or the non-IEP students in ICL®. Particularly exciting is the trend line being set up for students identified as economically disadvantaged, because the target for these students was not met (albeit by a slim margin) during Year 1. Furthermore, at the end of Year 1, this target was recalibrated—and increased—to align with increases in other Performance Targets and, as such, was a true "stretch" goal.

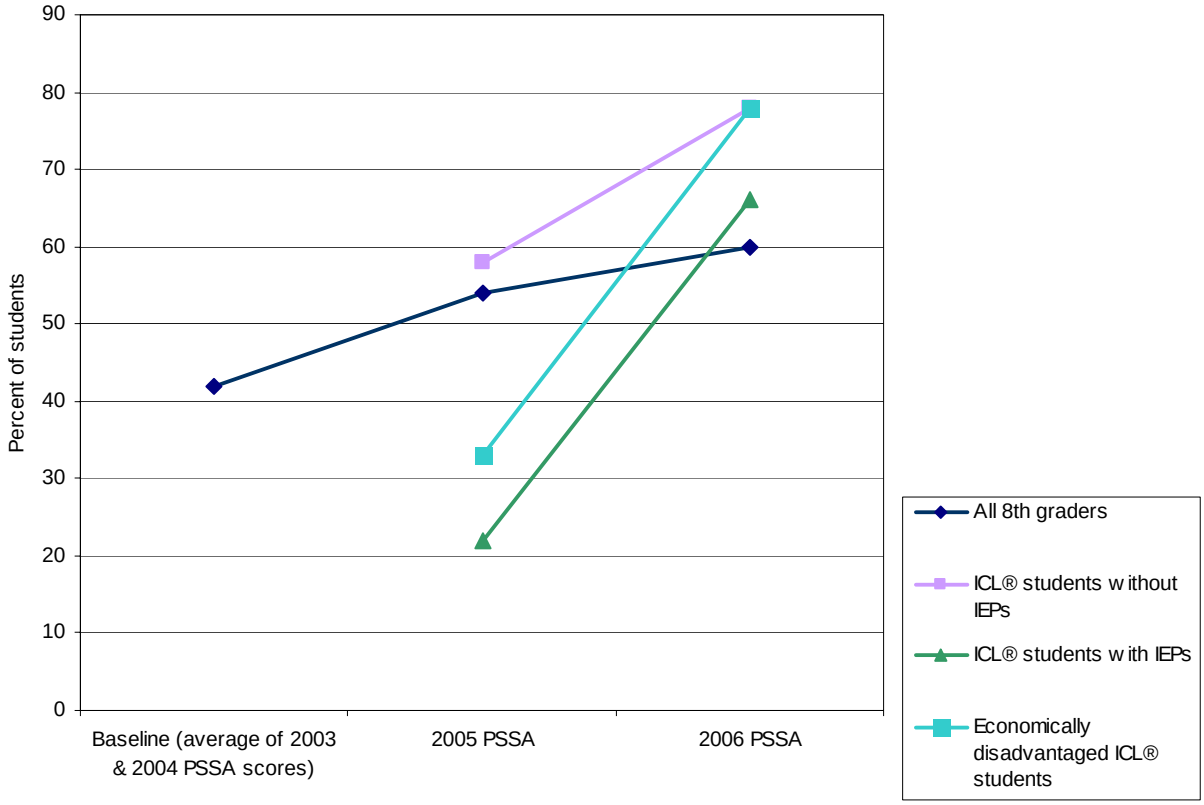

Figure 6.
Comparison of percent of RMS 8th grade students and ICL® sub-group populations scoring "Proficient" or "Advanced" on PSSA mathematics

[8] Note that the category "all RMS 8th grade students" includes students in the various subgroup populations. If one were to disaggregate data to identify only those 8th grade students not in ICL® or in special education or economically disadvantaged categories, we would see a higher trend line with which to compare the subgroups studied.

Performance Target 1.10 referred to improvement in RMS 8th grade students' performance on the Algebraic Concepts component of the PSSA over prior years. As noted previously, we really cannot compare Assessment Anchor D (Algebraic Concepts) scores reported beginning in 2006 to R28 (Algebra and Functions) scores reported by the state during the 2003 and 2004 baseline years. However, beginning with 2005 data, we are able to compare Assessment Anchor D scores to evaluate changes in performance of the sub-group populations as compared to the scores of RMS 8th grade students as a group. The following table provides a display of Anchor D weighted mean raw scores for students scoring at either the "Proficient" or "Advanced" levels on the SSM, the total test score provided by the state.[9]

Table 7.
Comparison of weighted mean Assessment Anchor D raw scores
of students with SSMs at "Proficient" or "Advanced" levels

	2005	2006
All RMS 8th graders	15.18	15.33
ICL® students without IEPs	13.63	14.33
ICL® students with IEPs	13.25	15.17
Economically disadvantaged ICL® students	13.33	15.00

It is important to remember that data presented in the preceding table have only limited validity, because the numbers of students in these population subgroups is small, and, in particular the number of ICL® students with IEPs is very small. Furthermore, even if sample sizes were sufficient to make generalizations, one must recognize (a) these data represent only two years of results, (b) different groups of students were tested, and (c) changes in these weighted mean raw scores, while positive, are unlikely to be statistically significant. One can say that progress apparently is being made, but additional data must be collected over time to determine whether this progress is significant.

Teachers involved in the ICL® classroom have shown rapid developmental progress both in terms of their concerns about the innovation and the manner in which they are implementing various aspects of the innovation bundle. As these teachers continue to gain more experience with ICL®, in particular, their concerns and implementation behavior (use) will continue to shift toward ever-stronger interest in maximizing student learning and achievement. This pattern would be expected, only as long as they continue to receive developmentally-appropriate support. The best way they can be supported going forward is by providing them time and resources to collaborate with each other and other ICL® users to make thoughtful decisions to meet the needs of students, both individually and collectively.

In conclusion, one may recall that, at the end of Year 1 of grant implementation, all Performance Targets but one (Performance Target 1.7) were met. The following table provides a summary of progress toward each of the Year 2 Performance Targets. During Year 2 of grant implementation, all student achievement Performance Targets were met—and, in fact, exceeded. In terms of Performance Goal 2, one of the teacher change Performance Targets was met, and there was excellent progress toward meeting the other.

[9] Weighted mean raw scores take into account the number of students in each subgroup and at each proficiency level.

Table 16.
Summary of progress toward Year 2 Performance Targets

	Achievement of Target
Performance Goal 1	
Target 1.2	Met
Target 1.4	Met
Target 1.6	Met
Target 1.8	Met
Target 1.10	Met
Target 1.12	--
Performance Goal 2	
Target 2.2	Met
Target 2.4	Not Met

Changes in student achievement, as measured by 8th grade PSSA results, and changes in teacher concerns and levels of use of the various components of this complex set of innovations, as measured through two lenses of the Concerns-Based Adoption Model (CBAM), have appeared very positive. Despite these early successes, it will be important to remember that "most changes in education take from three to five years to be implemented at a high level."[10] Teachers and change facilitators must remain focused on the innovation in order to fully realize this innovation's potential for enhancing teaching and increasing student achievement in mathematics in this setting. Clearly, this project shows promise. It will be important for change facilitators to support teachers' continued growth, while recognizing their needs will change as they become more experienced with the various aspects of this innovation bundle. Change facilitators, and experienced users, will need to provide developmentally-appropriate support to any new teachers brought into the user group—and not simply assume they will immediately function at the same high level as the experienced users. Along with continued teacher growth, one would expect to see modifications made to enhance student learning, with the result being continually increasing student achievement.

This project was funded through a substantial two-year EETT grant to the Williamsport School District. The grant funded I CAN Learn® software and technical support, a dedicated computer lab including computer hardware and specialized furniture, and extra training in this and other grant-related areas. Without these monies, the district would not have been in a position to implement this project. The project is showing early promise in terms of increasing mathematics assessment scores of 8th grade students at Roosevelt Middle School and, especially those of low-achieving sub-group populations of students. Selected students in grades 7 and 8 have been assigned to the lab, and, by the second semester of Year 2, several 6th grade students were added to the mix. Through careful scheduling, the ICL® lab is full during every available class period and is being used during special enrichment periods and in after-school tutoring programs. RMS ICL® teachers have made presentations to various groups, including, recently, one at a PaTTAN conference on tutoring. Roosevelt may well become a model site for I CAN Learn®, as the first school in Pennsylvania to adopt the model. As stated earlier, more time is needed to fully integrate the various components of this innovation bundle, but, at this time, it can be safely said that these monies were well spent.

[10] Hall, G.E. & Hord, S.M. (2001). *Implementing Change: Patterns, Principles, and Potholes*, (p. 5). Boston: Allyn & Bacon.