



SIIA SOFTWARE IMPLEMENTATION TOOLKIT

Guidelines for K-12 Educators

APRIL 2007



A PUBLICATION OF THE
SOFTWARE & INFORMATION INDUSTRY ASSOCIATION (SIIA)
EDUCATION DIVISION

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The Software & Information Industry Association is the principal trade association for the software and digital content industry. SIIA provides global services in government relations, business development, corporate education and intellectual property protection to the leading companies that are setting the pace for the digital age.

About SIIA's Education Division

SIIA's Education Division serves and represents over 150 member companies that provide software, digital content and other technologies that address educational needs. The Division shapes and supports the industry by providing leadership, advocacy, business development opportunities and critical market information. SIIA provides a neutral business forum for its members to understand business models, technological advancements, market trends, and best practices. With the leadership of the Division Board and collaborative efforts with educators and other stakeholders, the Division undertakes initiatives to enhance the use of educational technology and the success of SIIA members.

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Software & Information
Industry Association

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PREFACE

Purpose

Technology improves instruction and the business processes of educational institutions. But as software applications have been used in education over the past 25 years, a simple truth has emerged: the implementation of software is every bit as important as its features. The greatest challenge to achieving success with a software application is the fidelity of implementation. In fact, inadequate implementation is often the greatest cause of software's failure to meet educational objectives.

This Implementation Toolkit was created with the following purposes in mind:

1. Help K-12 educational institutions make better use of software products through the use of effective implementation practices.
2. Highlight the importance and impact of implementation practices on obtaining results from software use.
3. Provide K-12 educators and administrators with practical tools to use in the implementation process.

Background

The work to develop this Implementation Toolkit originated with the SIIA Education Division's Working Group on Promising Practices in Technology Implementation and Integration. The Working Group conducted a survey of both educational software vendors and the institutions that purchase their products. Results from that survey, feedback by experts in the field, and a review of existing resources, indicated a need for further information. SIIA then produced its Software Implementation Checklist for Educators which lead to the development of this Toolkit.

Note from the Editors

The SIIA recognizes that the readers of this Toolkit will each have a unique background they will apply to following the suggested guidance. The Toolkit is designed to provide a process, a structure, and the relevant tools through which readers can address issues critical to successful implementation. We recommend a focus on the key issues the Toolkit raises and the solutions it suggests with an awareness that some readers may seek deeper and more technical discussion.

Additionally, SIIA recognizes the involvement of teachers and administrators in successful software implementation. For the purposes of this document, however, the term "educator" refers to both roles.

As software applications have been used in education over the past 25 years, a simple truth has emerged: the implementation of software is every bit as important as its features.

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INTRODUCTION

Setting the Stage

Since around 1980, educators and the education technology industry have learned a progression of lessons about gaining results from the use of technology. Industry focus began with obtaining hardware and then shifted to selecting quality software. With those two priorities in place, thorough and proper training grew increasingly valuable. Most recently the industry has turned its attention to planning for the use of technology and evaluating its effectiveness. The era of state standards brought this focus on aligning educational applications to appropriate instructional purposes. The addition of each of these elements has slowly built an understanding of all the components required for the effective implementation of educational software.

Don Knezek, CEO of the International Society for Technology in Education (ISTE), adds:

“Issues such as the fidelity with which technology is implemented for improving learning, the evaluation and monitoring of impact and use of data, and the planned flexibility to adjust when results don’t align with targeted improvements are all important features of effective implementation of technology in the learning process.”
(Ascione)

These points are consistent with SIIA’s findings. In its *2000 Research Report on the Effectiveness of Technology in Schools*, SIIA found the following:

“Technology can improve teaching and learning, but just having technology doesn’t automatically translate into better instructional outcomes. Whether a given school experiences the potential benefits of technology depends on the software it chooses, what students actually do with the software and computer hardware, how educators structure and support technology-based learning, and whether there is sufficient access to the technology.” (SIIA, 2000; p. 7)

By taking the proper disciplined steps for effective implementation, educators can ensure that the use of software in instruction and management is successful.

The creators of such educational software are not alone in their concern for the proper implementation. Educators are also apprehensive because of what it can improve, such as:

- ♦ student performance
- ♦ efficiency and productivity in business and administrative processes
- ♦ large budget expenditures
- ♦ evidence of a return on the investment – that the software made a difference
- ♦ reputations of educators
- ♦ expanded use of technology in the involved schools.

By taking the proper disciplined steps for effective implementation, educators can ensure that the use of software in instruction and management is successful.

The education technology industry recognizes that success depends upon the ability of educators to obtain results from the software products they purchase. In this era of accountability, schools are no longer experimenting with new technologies. In purchasing technology products, educators expect a return on their investment in the form of improved student outcomes and more efficient business processes. Without effective software implementation practices, these results will be hard to achieve.

Planning Tenets

Software implementation planning borrows many precepts from good program planning in general, including the following ten basic steps.

1. Determine a program's objectives before planning proceeds.
2. Plan before implementing any of the program.
3. Involve all program stakeholders in the planning process.
4. Include criteria for evaluating the program's success in alignment with the program's objectives in the plan.
5. Assign an effective leader, with appropriate decision-making authority, to manage the implementation.
6. The physical environment, hardware, and networking infrastructure and the instructional enterprise environment for the implementation should match the requirements for which the software was designed.
7. Adequately train all staff involved in the implementation in all aspects of the software's use and integration into their curriculum and instruction.

By taking the proper disciplined steps for effective implementation, educators can ensure that the use of software in instruction and management is successful.

8. Ensure that all end users of the software have the prerequisite knowledge and skills specified for the product's use.
9. Monitor the entire implementation and resolve the resulting issues on an ongoing basis.
10. Apply the evaluation results to each subsequent stage of implementation.

While applying these ten steps in developing any implementation plan, also consider two high-level concepts should be considered. At first glance, they might seem contradictory, but they actually work hand in hand.

Restricted Scope

Taking on too much change at once can doom implementation. The challenge of meshing multiple components with a small group of users is only further complicated by simultaneously creating institutional change. A pilot project is an effective strategy that allows the “shakedown” to be worked out among a small group of enthusiastic users before the new software is introduced on a broader scale. A pilot typically involves fewer objectives, staff, and end users, a shorter implementation period, and less cost. It allows the customer to preview the logistical challenges involved and experience the degree of success to expect from the software before introducing the software on a broader scale.

Extended Scope

All implementations experience points in which the original plan encounters unexpected challenges. Thus, it is important to consider a multi-stage approach to provide opportunities for changes. Stage 1 serves as the “shakedown cruise” to address initial complications. Stage 2 allows all participants to gain confidence and familiarity with the software. Finally, Stage 3 reaches the point where the “new” product becomes the institutional norm. Situations in which software brings profound change, stages may be quite long. For a major implementation, the complete process might take up to three years. Projects of lesser magnitude could take less time.

The Toolkit

This Toolkit contains comprehensive information on implementing software products. **The degree to which a school or district makes use of this information will depend on the scope of the implementation in question.** Those seeking to implement complex software for a large user base are advised to follow the complete process described herein. Those implementing less complex products

for a small user base can be more selective of the points they wish to incorporate into their process. The ten basic steps referenced above, however, are applicable to the success of all implementations. For the purposes of this Toolkit, software is defined broadly to include a wide variety of applications that:

- ♦ Meet instructional, curriculum/content, assessment, classroom management, and enterprise level administrative tasks
- ♦ Are used in the classroom or school office, and are potentially accessed offsite such as from home (student or educator) or a mobile device
- ♦ Are installed on a computer or other device, school local or wide area network, or are hosted by a third party and accessed online via a web browser
- ♦ Include a wide variety of digital content, ranging from an electronic version of printed material (e.g., pdf file or e-book) to multi-media, interactive, and adaptive courseware.

The Toolkit applies to both instructional and administrative software applications. The implementation processes for both are very similar with two main differences. First, instructional applications address teaching and learning. Administrative applications address process improvement. Second administrative applications involve organizational change for adults only while instructional applications extend to both adults and students. This Toolkit attempts to refer to both types of software.

This Toolkit assumes that an educational institution has purchased software and that it is now time to plan its implementation. Readers should note the availability of many resources for selecting educational software. For suggestions on how to improve the process of soliciting and responding to proposals for software selection, see the SIIA Publication Guidelines for Improving the Request for Proposal (RFP) and Competitive Bidding Process for Educational Technology Products and Services. (SIIA, 2005)

This Toolkit identifies seven components in the software implementation process, as listed below. Because many institutions already employ these components when implementing new programs, applying them to technology should be a comfortable extension of existing practice. Consider the Toolkit components as a “refresher course.”

Component	Descriptive Information	Planning Tool with Sample Data	Planning Tool with No Data for Your Use
1. Determine objectives and obtain stakeholder buy-in	page 13	page 14	page 41
2. Integration planning	page 15	page 16	page 41
3. Logistics planning	page 17	pages 18,19	page 42
4. Delivery and installation of software	page 22	page 23	page 43
5. Professional development	page 24		
6. Implementation monitoring and software support	page 26	page 28	pages 43, 44
7. Program evaluation	page 29	pages 32, 33	page 45

A *planning tool* accompanies most of these components to suggest the design of a worksheet that could be included in an implementation plan or used to track implementation events. Where these are shown in the text, they include sample information to help the reader understand their use based on the following scenario:

A school district wants to revise its middle school math instruction, especially in 6th grade, due to declining state math test scores and the realization that many 7th and 8th grade students have not mastered math skills from the lower grades. Lincoln Middle School has been chosen to initiate a new mathematics software program that will complement and expand the current instructional approaches and materials. Implementation planning begins in April, and student use of the program begins in September.

A full set of blank forms can be found in the Appendix: Implementation PLANNING FORMs. **Readers are encouraged to download these forms** from the designated SIIA Web site location and modify them for their own planning purposes. Depending on the institution's practices, an additional line containing sign-off dates could be beneficial for documentation purposes.

Roughly speaking, these components are described in chronological order. However, some of them actually are addressed several times in the course of an implementation. For example, program evaluation is

planned at the beginning, data is collected during implementation, and specific analyses are performed at the end.

Two Appendices are included to assist in tracking the implementation steps:

1. *Timeline Model for Software Implementation Planning*, which shows when each component is planned and carried out during the 15 month duration of a sample implementation;
2. *Software Implementation Checklist*, which lists the key events in each component and allows the events to be tracked in order.

SOFTWARE IMPLEMENTATION PROCESS

Component I:

Determine Objectives and Obtain Stakeholder Buy-in

Prior to the evaluation and selection of a software product, an effective project begins by defining the its vision, purpose, and high-level goals. Given the investment of time, effort, and funds a school or district will make, the reason for the software's selection, its implementation, and the institution's objectives should be clear to everyone involved. Also verify that the selected software vendor has clearly communicated the purpose and goals for using the product. The company's goals should match those of the institution.

Additionally, it is important to verify with the vendor by the time of selection that the chosen software has been (or will soon be) successfully tested in settings similar to those of your intended use. This will help confirm a match between your purposes for the product and the goals of the publisher.

Objectives

Every aspect of a software implementation plan is driven by its specific objectives. Educational software can have many uses, such as to instruct or motivate students, expand the curriculum, train teachers, or streamline administrative functions. The selected software might have the capacity to impact several objectives, but its success will probably be judged only by a few. For this reason, it is important to clearly identify the objectives for the software program before planning its implementation.

Stakeholders

Most software programs support numerous and diverse users. For example, an instructional program will affect administrators, teachers, students, parents, and specialists in curriculum, technology, and assessment. An administrative program will affect administrators, business managers, business functional staff, and instructional staff. Institutional executives, such as the district heads of curriculum, business, and/or technology, should be included ex-officio. All appropriate stakeholders, therefore, should participate in defining the program's objectives and the factors that will determine its success and the information should be recorded in the Evaluation Plan.

Convincing these various stakeholders depends on establishing the software's implied "contract." Obtain a written commitment from the

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staff supporting, using, and benefiting from the software stating that it was selected to meet needs important to them and that they are prepared to make the effort required for proper implementation. If problems arise in the implementation of the software, all stakeholders will be committed to addressing them. With this initial commitment no one can opt out during implementation.

PLANNING FORM: Identifying Objectives and Stakeholders

Sample Scenario: Lincoln Middle School

Vision For Use of the Software	6 th grade students will improve their understanding of mathematics concepts and skills, resulting in increased scores on state math tests and a decrease in the amount of “re-teaching” 7 th and 8 th grade teachers must do. Students will gain a better appreciation for the importance of math by seeing real world uses for the concepts they are studying. Students will gain motivation in math by working together on projects that relate to the concepts they are studying.
Purpose For Using the Software	The software product demonstrates concepts in alternative ways; uses simulations, video scenarios, and projects as part of the instruction; and has a built-in assessment component to provide feedback to students and teachers.
High-level Goals to be Achieved	Improved state math test scores in 6 th grade in classrooms where the software is implemented according to the plan. Less time spent in higher grades reviewing content from 6 th grade and below. Students demonstrate more readily how mathematics is used in everyday life. Students display higher motivation for math instruction.

Objectives	Stakeholders Primary Concerns				
	Students	6 th Grade Teachers	7 th -8 th Grd Teachers	Mid Sch Principals	Dist Tech Dept
Improved Math Skills	X	X	X	X	
Improved Understanding of Uses of Math	X	X	X	X	
Improved Motivation in Math		X	X	X	X
Expansion of Math Concepts Covered		X	X		X
Use of Alternative Math Instructional Methods		X	X		X
Others ...					

Component 2: Integration Planning

To maximize efficacy, software should be seen as a piece of an entire system, connected to all other learning or work processes. An online inventory system, for example, should be planned with the current inventory procedures and staffing in mind. An instructional mathematics software program should mesh with other forms of mathematics instruction, such as teacher demonstrations or student use of textbooks and manipulatives.

To maximize efficacy, software should be seen as a piece of an entire system, connected to all other learning or work processes.

The value contributed by the software may necessitate a change in the processes in place prior to implementation. The two should be complementary in order to achieve planned results. Leaders in the ed tech industry agree that it is imperative to integrate process change, organizational alignment, and technology to ensure a successful software implementation.

Planning Factors

The following factors should be considered when planning for the use of instructional applications:

- ◆ learning standards it supports
- ◆ learning needs of the students for whom it is intended
- ◆ current teaching methods
- ◆ organization of classrooms and other learning spaces used for technology
- ◆ daily instructional schedule
- ◆ assessment methods for the area of learning
- ◆ other technology-based programs used by the students for similar purposes
- ◆ non-technology learning materials available to the students.

The use of administrative software should consider the following factors in the planning stage:

- ◆ current business processes
- ◆ regulations
- ◆ materials
- ◆ staffing structures
- ◆ accountability measures

Logistics

It is advisable to communicate the relationship between the software and these existing conditions to the users. For instructional software, for example, moving students to a computer lab and back to class is not trivial. It is also a challenge to then create a connection between the learning in the computer lab and instruction in the classroom. Effort should be given to integrating the two types of activity.

With an administrative application, it is easy to tout the notion of “automating our processes.” But what does this mean to the daily routine of users? A walkthrough of the processes will show the differences between current processes and the new, modified practices. For example, the software may provide new information to users or a new, faster process might imply changes to work schedules. These and similar impacts should all be considered beforehand.

Eventually, the use of the new software will become second nature. Full and proper integration will enable that.

PLANNING FORM: Integration Factors

Sample Scenario: Lincoln Middle School

Categories	Current Practices	Integration of New Software
<i>Instructional Applications</i>		
Learning Standards (State)	Focus on explanation and practice	Inclusion of application of math content and collaborative work will bring new perspective to fundamental skills
Assessment Methods	Focus on graded exercises and tests	Extends current methods with project-based work requiring higher order thinking and teacher documentation of collaborative work
Other Tech Programs	Focus on games to practice skills	Uses those skills to support larger concepts
Non-Tech Instructional Materials	Use of textbook with workbook exercises	Enriches print materials with multimedia presentations and interactive activity

Component 3: Logistics Planning

The logistics planning stage includes many decisions that will guide the implementation project. When making these decisions, the following areas will be important:

- ♦ leadership
- ♦ communication procedures
- ♦ task organization
- ♦ readiness of staff, equipment and facilities
- ♦ technical support
- ♦ software use
- ♦ program evaluation
- ♦ budgeting

A critical first step in logistics planning is the appointment of a strong coordinator from the institution who will have the overall responsibility and authority to carry out and monitor the implementation of the software.

Leadership

Strong leadership is essential to the success of a software implementation. A critical first step in logistics planning is the appointment of a strong Coordinator from the institution who will have the overall responsibility and authority to carry out and monitor the implementation of the software. Depending on the size of the project, the Coordinator will need a team to which management of certain components can be delegated. It might be necessary to designate specific staff responsibilities in areas such as professional development, installation, and support of the software. This management team will be accountable for carrying out the implementation process and reporting to the program's executive sponsors.

Similarly, it is critical that the software vendor also designate a liaison available to regularly answer questions and resolve problems. The Coordinator and vendor representative must function as a team pursuing a common set of outcomes. They should be familiar to each other's supervisors and will occasionally issue joint status reports.

Work Breakdown Structure

The logistics plan for a project is sometimes referred to as the Work Breakdown Structure (WBS). The WBS specifies each step in the plan and identifies the participants, timeline, and budget. It might be categorized by areas such as technology readiness, software purchase and installation, professional development, program monitoring and reporting, and program evaluation. For each area, the WBS will show abbreviated answers to key questions:

- ♦ What is happening?
- ♦ Who is involved?
- ♦ When will it take place?
- ♦ Where will it take place?
- ♦ How will it get done?

The WBS should be drafted by the project leadership team and reviewed by all personnel involved in the implementation to ensure a common understanding of the work. The WBS includes benchmarks that will be monitored throughout the implementation process.

PLANNING FORM: Work Breakdown Structure

Sample Scenario: Lincoln Middle School

Task #	Task Description	Lead	Staff	Budget*	Start Date	End Date Milestone	Dependencies
1.0	Logistics Planning	DG			4/15	6/30	
2.0	Delivery & Installation	AF			5/1	6/24	
2.1	Schedule delivery		WV		5/1	5/5	
2.2	Site Preparation		PF,AH	\$5,000	5/1	6/1	
2.3	Accept delivery		PF,AH		5/7	5/7	
2.4	Install		RO,JG		5/12	6/22	
2.5	Test & Certify		RO,JG		5/14	6/24	
3.0	Professional Development	CT			7/1	8/15	Must have equipment & software at each training site
3.1	Select participants		Principals		7/1	7/6	
3.2	Schedule sessions		WV		7/1	7/12	
3.3	Collect materials		BC, PD	\$3,000	7/8	7/15	
3.4	Deliver sessions		KJ, BH		7/16	8/7	
3.5	Collect Feedback		BC, PD		8/1	8/15	
4.0	Implementation Monitoring						
4.1	Equipment Certification						
4.2	Software Installation						
5.0	Software Support						
5.1	Establish protocols between sites & vendor						
5.2	Vendor maintenance on call						
6.0	Program Evaluation						
6.1	Collect information						
6.2	Analyze information						
6.3	Report findings						

*In addition to the duties of regular personnel

Change Order

As an implementation progresses, the team will determine that some aspects of the original plan should be revised. A “change order” process should be established with the vendor in advance to formally record these agreed changes as they will affect the WBS, the work done by program participants, and possibly the budget. A written Change Order, signed by representatives from both parties, should document each decision.

Technology Readiness Survey

It is important to determine that the usage location are prepared for the software. A survey is an effective tool to verify that the vendor’s recommended technology infrastructure exists and can use and maintain the product successfully. For example, decisions should be made as to how many computer stations are needed at each participating location, the placement of each one, and the Internet bandwidth required.

Prior to implementation, it is essential to check for compliance with these specifications for each location and computer. Make a note of any additional expenditures needed to reach compliance. If not all locations or computers comply at the start, the project plan can be divided into “waves,” starting with those that are compliant and adding the other locations as funds become available for upgrade to the specified technology level.

PLANNING FORM: Technology Readiness Survey

Sample Scenario: Lincoln Middle School

Location	Computers	Operating system	Networking connections	Internet access	Printing capability
Lincoln MS					
Classroom 1	4	Windows XP	OK	OK	OK
Classroom 2	4	Windows XP	OK	OK	OK
Classroom 3	4	Windows XP	Needs upgrade	OK	OK
Classroom 4	4	Windows XP	OK	OK	OK
Classroom 5	4	Windows XP	OK	OK	Needs upgrade
Classroom 6	4	Windows XP	OK	OK	Needs upgrade
Classroom 7	4	Windows XP	Needs upgrade	OK	OK
Classroom 8	4	Mac OSX	OK	OK	OK
Classroom 9	4	Mac OSX	OK	OK	OK
Lab A	20	Windows XP	16 OK 4 need upgrade	OK	OK

Technical Support

Arrange for technical problem-solving support with the vendor for contact during work hours. Depending on the agreement and applicable fees, this may include both access to off-site resources available via e-mail and phone and the availability for on-site repair visits depending on the severity of the problem. Be sure that both the local staff and the vendor have common expectations of what can be done in certain situations. Provide local staff with an instruction sheet with contact information if technical problems arise and the information to have on-hand when describing the problem to the vendor.

Time on Task Access

For instructional applications, it is important that students have adequate time to use the software. The software was designed based on the assumption of a certain amount of student contact time. Consider that students receive perhaps 30 hours of instruction per week. Using

a software application 90 minutes per week, while significant, still constitutes only 5% of a student's instructional experience. Using that 90 minutes well, and integrating it into other class reading activities, will help leverage the value provided by the software. Also check that the scheduling of the implementation fits well with the institution's calendar and won't be compromised by lack of access due to testing, vacation, or other periods of special activity.

Personnel Skills

Verify that the involved personnel have the appropriate technology background to successfully learn the operation of the software. Training for the school staff will begin with the assumption that the users already know certain fundamentals. When the trainer says, "You can change the format of this report just like you would an Excel® spreadsheet," the participants should already have some Excel experience. Work with the vendor to identify what basic technology skills are required, and check to ensure staff have them. It might be necessary to plan some "preparedness" sessions to help selected staff "catch up" before the training.

For instructional applications, it is important that students have adequate time to use the software.

Evaluation Planning

The Program Evaluation section of the Toolkit describes the structure of a program evaluation plan. This should be initially developed as part of building the logistics plan, with the program success criteria established in the beginning. Those criteria must relate to effects the software can actually impact. For example, software can improve reading skills but cannot necessarily cause children to read more books.

Multiple-Stage Implementation

For all but the smallest scale projects, consider committing to a multiple-stage implementation so that the inevitable start-up issues in the first stage can be remedied, with improved results.

For all but the smallest scale projects, consider committing to a multiple-stage implementation so that the inevitable start-up issues in the first stage can be remedied, with improved results. A two or three-year plan should be possible if the institution is serious about a major software implementation. This would allow for a start-up period, a settling-in period, and a normalization period as the use of the software becomes standard procedure. Give the staff ample time to shift practices, work out the bugs, and create efficiencies in the use of the application.

A multiple-year implementation requires a “sustainability plan” to establish budgetary support for the entire duration of the implementation. It is critical at this point to consider the Total Cost of Ownership [see Consortium for School Networking]. In addition to the initial costs of the program, budget items such as the following should also be included:

- ♦ follow-up training from the vendor (especially for new staff who arrive after the initial training)
- ♦ internal technical support
- ♦ vendor off-site technical support
- ♦ adequate hardware and network availability
- ♦ expansion of software licenses to include new users
- ♦ future upgrades of the software.

Component 4: Delivery and Installation of Software

Delivery and installation is mostly a matter of organization:

- ♦ The team member responsible for this should receive from the vendor a full listing of product components to be shipped to each location.
- ♦ A contact person at each location should set aside a staging area for shipments so packages received are all put in the same place to prevent misplacement and loss.
- ♦ Prior to the delivery, all computers that will use the new software should be checked to ensure they will be available for installation on the scheduled day.

Schedule the installation of the software on servers and/or work stations so the disruption to normal technology use is minimized, perhaps during a weekend or time-off period when the computers at that location will not be in use.

Documentation

All software installation procedures should be documented by the vendor, with copies given to the local educator contacts. The installers, whether local staff or from the vendor, should be supplied with a procedural checklist that is reviewed prior to the actual installation. The installation steps should be carefully documented to enable effective troubleshooting in the event of a problem. This will help distinguish between a software and an installation error.

Establish a test and verification procedure before the actual installation so that a standard set of steps is taken to test each computer in which the software is installed. Those testing should know exactly what steps to take and what results to expect so that they can identify any deviations.

Awareness

Finally, carry out a public relations effort. All staff who will use the software need information on what the installation will entail and what the impact might be on existing technology use. Then publicize the progress of the installation until it is complete. It is best not to rely on word of mouth to convey whether the new product will be ready for use on schedule.

The installation steps should be carefully documented to enable effective troubleshooting in the event of a problem.

PLANNING FORM: Delivery and Installation of Software

Sample Scenario: Lincoln Middle School

Hardware	Existing or New	If New, Planned Delivery Date	Date All Components Arrived	Date Hdw Passed for Readiness	Date Software Delivered	Date Software Installed	Date Software Certified
Lincoln MS							
Classroom 1	new	5/1	5/3	5/10	5/7	5/12	5/14
Classroom 2	new	5/1	5/3	5/10	5/7	5/12	5/14
Classroom 3	exist			5/21	5/7	5/23	5/25
Classroom 4	exist			5/21	5/7	5/23	5/25
Classroom 5	exist			6/12	5/7	6/14	6/16
Classroom 6	exist			6/12	5/7	6/14	6/16
Classroom 7	exist			6/12	5/7	6/14	6/16
Classroom 8	exist			6/20	5/7	6/22	6/24
Classroom 9	exist			6/20	5/7	6/22	6/24
Lab A	exist			6/2	5/7	6/4	6/6

Component 5: Professional Development

It is important to provide a thorough orientation and training for the staff who will implement the product. This can be delivered by local professional development providers and/or vendor representatives with a preliminary step that can include any review of technology use or the curriculum and instructional practices on which an instructional application is based. After this optional review, there are three types of staff development to consider:

1. Background orientation on the design and purpose of the software for all users.

For instructional applications, the following topics are recommended:

- ♦ the institution's objectives and expectations
- ♦ the software's design and recommended instructional strategies
- ♦ means and duration of effectively engaging students with the software
- ♦ integration of the software with other classroom activities.

For administrative applications, the following topics are recommended:

- ♦ the institution's objectives and expectations
- ♦ the software's functional features to be employed by the users
- ♦ integration of the software with other administrative procedures.

2. Operational training on the software for all users for all applications
3. Technical training for internal staff supporting the software's operation for all applications.

Staff Development & Best Practices

Staff development in the use of technology is very similar to other forms of professional development for adult professionals, adhering to the tenets below. It is important that training activities be ongoing and integrated into a larger professional development program to ensure that the information presented is internalized by staff.

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With these first five steps in place, the implementation of the software application can now take place. The preparation from Components 1 through 5 is put to use and monitoring and evaluation steps are activated from Components 6 and 7.

The following are among the best practices for staff development:

- ♦ Train work groups together, such as teachers of the same grade level or subject, or teachers and their administrators.
- ♦ Review with participants what they already know that applies to using the software.
- ♦ Base new information on this current knowledge.
- ♦ Make it clear why participants are receiving training and what the outcomes will be.
- ♦ Make the training a mix of presentation and participant hands-on exercises.
- ♦ Use examples from the participants' environment to demonstrate new procedures.
- ♦ Have participants work in pairs so they can help and encourage each other.
- ♦ Have participants share their experiences from the workshop and discuss how to best apply what they have learned to their work practices.
- ♦ Provide some form of recognition to participants for completing the training.
- ♦ Collect evaluation data from training participants.
- ♦ Schedule follow-up sessions at 2-3 month periods after the initial training so that participants can share their experience with the software, including newly discovered tips for maximizing success. Some of this can be accomplished through the use of virtual peer community Web communication.

A train-the-trainer approach is often useful in working with vendors. Focusing the vendor expert on a small cadre of staff developers is a way to optimize that expert's time. Then the staff developers can spread the training to the staff at large.

If the vendor offers online self-training, it will allow the staff to obtain at least some of the instruction on a schedule most convenient to them. Remember also that staff joining the institution after the initial training will need the training as well, so periodic sessions will need to be scheduled.

With these first five steps in place, the implementation of the software application can now take place. The preparation from Components 1 through 5 is put to use and monitoring and evaluation steps are activated from Components 6 and 7.

Component 6: Implementation Monitoring and Software Support

During the actual implementation, it is critical to monitor events to insure adherence to the plan and its schedule, and to address unforeseen problems that arise. The Coordinator selected at the start of the planning process should establish procedures for checking the progress of all facets of the implementation and the program management team should report on the status of their specific areas of responsibility.

Items to Monitor

Items to monitor might include the following indicators of performance for the educator staff, students if they are users, and the vendor:

- ♦ Delivery of the new software to each location building and computer station
- ♦ Installation of the new software at each location
- ♦ Scheduling of all participants in the appropriate training sessions
- ♦ Completion of training sessions
- ♦ Collection of evaluation data
- ♦ Use of the new software as recorded by users (especially data from teachers on when their classes actually use the application)
- ♦ Use of the software as recorded by the system (to verify that individuals are getting as much contact time with the application as planned)
- ♦ Performance of the software, using metrics such as percent of “up time” and percent of time with adequate response time to user input
- ♦ Performance of the users as a group, using such metrics as percent of correct student responses to software activity questions and average time to process transactions for office staff
- ♦ Response promptness of vendor when called for assistance, either answering questions or fixing problems.

For instructional applications, ensure that the software is being used as prescribed, with adequate on-task time for students. Also, confirm that information generated by the software on student performance is included in the analysis of individual student progress. For administrative applications, ensure that the data generated by the software is included in the analysis of operational metrics.

Much of the data collected throughout the implementation, can be considered formative information useful in making mid-course corrections in the use of the software.

Mid-Course Corrections

Much of the data collected throughout the implementation, can be considered formative information useful in making mid-course corrections in the use of the software. The program management team should meet regularly to discuss this information and program events to determine solutions to problems. The Coordinator will report these results to the executive sponsors of the program. In addition, periodic status reports should be issued to the other stakeholders as a form of accountability.

PLANNING FORM: Monitoring Software Implementation and Vendor Support

Sample Scenario: Lincoln Middle School

Monitored Item	Person Responsible	Planned Start Date	Actual Start Date	Planned End Date	Actual End Date
Software Delivery					
Classrooms	AF	5/7	5/7	5/7	5/7
Lab	RO	5/7	5/7	5/7	5/9
Software Installation					
Classrooms	AF	5/12	5/13	6/22	6/25
Lab	RO	6/4	6/4	6/4	6/6
Training Registration					
Location 1					
Location 2					
Training Completion					
Location 1					
Location 2					
Evaluation Data Collection					
Student Fall Test Results					
Student Spring Test Results					
Teacher Survey Results					
Budget Analysis					

	Metric	Planned Result	Actual Result
Software Use Logged by Users			
Month 1	# students	270 students	206 students
Month 2	# students	270 students	242 students
Month 3	# students	270 students	268 students
Software Use Logged by System			
Month 1	time on system	1620 hours	1167 hours
Month 2	time on system	1620 hours	1421 hours
Month 3	time on system	1620 hours	1580 hours
% Time Adequate System Performance			
Month 1			
Month 2			
Month 3			
Percent Correct Responses by Students			
By School			
By Class			
Average Response Time for Vendor Maintenance			
Offsite Assistance			
Onsite Assistance			

Component 7: Program Evaluation

As with any program implementation, it is vital to evaluate the process upon completion. This evaluation plan should be created as part of Logistics Planning to ensure clarity in the means through which success will be judged. Although formal evaluations might include the use of structured research methods, the evaluation planning process resembles an exercise in logic.

The steps for planning a program evaluation include:

- Step 1: Formulate the judgment or decision to be made.
- Step 2: Formulate questions necessary to make the judgment/decision.
- Step 3: Determine the information necessary to answer those questions.
- Step 4: Choose the methods necessary to collect the information.
- Step 5: Determine the criteria to apply to the collected information to determine the answer to each question.
(source: Texas Center for Educational Technology)

The Evaluation Plan judgments will address two issues: how closely the implementation followed the plan (formative information) and how closely the actual results resemble the planned objectives (summative information).

- I. The following questions can help determine if the technology program's implementation actually followed the plan.
 - ♦ Did the instructional implementation match the vendor's recommendations?
 - ♦ Was the program operational on schedule?
 - ♦ Was the equipment required to run the software in place?
 - ♦ Did all the involved teachers and students receive the related materials for the program?
 - ♦ Did the users receive the required training?
 - ♦ Did users have the planned amount of access to the program?
 - ♦ Did the program expense remain within the program budget?

2. The following questions can help determine if the technology program's results met the planned objectives (for instructional software):
- ♦ Did student test scores increase in areas covered by the software?
 - ♦ Did student grades improve in areas covered by the software?
 - ♦ Was new subject matter included that wasn't covered before?
 - ♦ Did students show signs of increased motivation for the subject matter covered?

The evaluation planning steps can be applied to either of these issues, as in the following example:

Judgment:	Whether the implementation of the technology program produced results that met our objectives
Question I:	Did student test scores increase in areas covered by the software when it was used properly?
Information:	Scores on the spring state test compared to fall scores for six classrooms of students in which the software was used.
Methods:	Determine the difference between the fall and spring scores for each student and compare gains to the degree the software was used according to the school's implementation plan.
Criteria:	Success means that at least 30% of the students showed an increased score of at least 5% in classrooms where the software was implemented according to plan.

Each judgment can have multiple questions, each question multiple information types, and each information type multiple methods of data collection.

*To be confident
in the evaluation
plan, test it with the
anticipated results.*

Evaluation Adjustments

An evaluation plan can look good on paper, but seem off-target when people are confronted by actual program results. To be confident in the evaluation plan, test it with the anticipated results.

Prior to the program's launch date, draft a report of hypothetical results and consider what the reaction of stakeholders would be. This could lead to useful "fine tuning" changes that avoid controversy later. Consider the following examples:

- ♦ Scenario: True, we did not reach our criteria of raising math test scores by 8%, but we reached 6%, which is sufficient to continue use of the program.
- ♦ Adjustment: Change the Evaluation Plan criteria for positive results from 8% gain to 6%.

- ♦ Scenario: We gathered data on parent opinions about our new technology-based reading program, but test score improvement or number of books read by students.
- ♦ Adjustment: Reconsider whether the Evaluation Plan question about parent opinion is worth pursuing, given the cost and effort necessary to collect it.

- ♦ Scenario: True, student scores in science increased 5%, which was our criteria for success, but the principal wouldn't renew the use of the program anyway because she knows that teachers don't like the amount of preparation required to use it.
- ♦ Adjustment: Add an Evaluation Plan question about teacher opinion, which originally wasn't included.

The software implementation will typically be a multiple-stage endeavor. Each stage could be considered a new cycle in that implementation. Although evaluation data on program results is often considered summative in nature, designed to render a judgment on the program's success, it can also be considered formative to each cycle. The data collected during Stage 1 will lead to a Stage 1 judgment, but will also be used to improve the implementation for Stage 2, and so on. Eventually, the data will contribute to major summative decisions, such as whether to continue the program's use and the degree of funding it warrants.

PLANNING FORM: Educational Software Program Evaluation

Sample Scenario: Lincoln Middle School

Evaluation of Implementation

Indicators	Planned Execution	Actual Execution
Schedule Milestones	Eight key milestones will be met on schedule or earlier.	One key milestone was met early. Five key milestones were met on schedule. Two key milestones were late, by no more than 2 weeks.
Budget (beyond staff salaries and the software purchase & maintenance contract)	Budgeted amounts for equipment upgrades, new equipment purchases, site preparation, training materials, and substitute teacher time will be sufficient for the actual costs incurred.	Costs for those items were 2% more than budgeted.
Training	100% of the teachers using the software will be fully trained by August 25.	95% of the teachers using the software were fully trained by August 25 and the remaining 5% the following week.
	Training participants will on average rate the value of the sessions at 4.6 or higher on a 1-5 scale.	Training participants on average rated the value of the sessions at 4.8 on a 1-5 scale.
Equipment	100% of the equipment planned for use with the software will be certified as ready by the start of installation.	92% of the equipment planned for use with the software was certified as ready by the start of installation. Three computers were too old and had to be replaced.
Access to Software	The students in all 9 of the Lincoln Middle School 6 th grade classrooms will use the software at least 90 minutes per week during October – April (excepting holiday periods).	The students in 7 of the Lincoln Middle School 6 th grade classrooms used the software at least 90 minutes per week during October – April (excepting holiday periods). The other two classrooms averaged 65 minutes per week.

Evaluation of Results

Judgment:

Whether the classrooms that implemented the software according to plan met the plan's objectives.

Question 1: Did student test scores increase in areas covered by the software when it was used properly?

Question 2: Did student motivation for learning mathematics increase?

Question 3: Were students presented with new experiences in math lessons compared to the current curriculum.

Info:	Method:	Info:	Method:	Info:	Method:
Scores on the spring state test compared to fall scores for six classrooms of students in which the software was used.	Determine the difference between the fall and spring scores for each student and compare gains to the degree the software was used according to the school's implementation plan.	Teacher observations of student desire to participate in math instructional activities during the course of the year.	Teacher observations for each student will be recorded in a log. Focus on participation in group projects.	Number of real-world applications explored during the year, and number of collaborative projects produced.	Compare lesson plans of teachers using the software to those used the prior year.
Criteria: Success means that at least 30% of the students showed an increased score of at least 5% in classrooms where the software was implemented according to plan.		Criteria: Success means that teacher observations will show an increase in motivation for at least 50% of the students in each class.		Criteria: Success means that explorations of real-world math applications and number of collaborative projects will at least double when using the software, compared to the prior year.	

CONCLUSION

Joint Commitment

Producing an effective software implementation requires a joint commitment on the part of the educational customer and the software provider. The premise for this commitment is as follows:

- ♦ The vendor has designed the software to succeed under a specified set of conditions.
- ♦ The customer must understand extent to which the differences the ideal and the actual conditions will affect the outcomes.
- ♦ The customer and the vendor must have a working relationship that addresses and resolves situations in which the specified conditions either are too difficult to establish or don't produce the intended results.

Expectations

In making this commitment, the customer has expectations of the vendor. Chief among these is that the vendor treats the customer as a business partner, not just a purchaser, and that the vendor takes a genuine interest in the general success of the whole educational program, not just the software aspect of it.

As a business partner, the customer expects that the vendor will:

- ♦ Come to the project prepared to offer extensive implementation recommendations based on experience gained from many prior implementations.
- ♦ Engage in co-planning with the institution's implementation manager, and make clear all vendor related implementation costs in the initial purchase agreement.
- ♦ Prepare to consider pilot programs as a first step, especially with customers who don't have extensive large-scale software implementation experience.
- ♦ Provide hands-on installation and testing, extensive user training, and off-site and on-site assistance when requested.
- ♦ Provide personal attention that generates goodwill, fosters extensive communication, and helps in publicizing the program's success.
- ♦ Display an attitude that going the extra mile for this implementation supports future business opportunities.

Similarly, the vendor has expectations for the educational customer, such as:

- ♦ Treat the vendor as a business partner, not just a seller.
- ♦ Ensure that the purchase agreement explicitly includes all expectations for implementation assistance.
- ♦ Recognize that if the need for additional services or product customization beyond the scope of the purchase agreement becomes apparent after the implementation starts, it might have to be addressed with additional costs.
- ♦ Make key managers readily available for meetings and other communication.
- ♦ Make facilities readily available to vendor personnel for installation and maintenance.
- ♦ Ensure that all staff assigned to vendor training sessions arrive on time and actively participate.
- ♦ Be proactive in suggesting solutions to implementation problems and be prepared to make changes to deal with those problems.
- ♦ Make implementation sites available as references for the vendor's future prospective customers.
- ♦ Make information on the implementation program available for use in vendor publicity.
- ♦ Pay all invoices according to schedule.
- ♦ Ensure that if the vendor goes the extra mile, future bidding opportunities are made available.

Given the complexity of a major software implementation program, a smooth working relationship between the customer and vendor takes some time to develop. It is to the advantage of both parties to be able to leverage that relationship beyond the first implementation project. Effective implementation practices established in an initial project can be applied to future endeavors, eliminating a new learning curve.

This complementary relationship serves to support every aspect of the successful software implementation process. This cooperation between the educational customers and the vendors enables the integration team to plan, manage, and evaluate their software programs by together considering the following stages in their implementation processes:

- ♦ Determine clear objectives and reach stakeholder consensus
- ♦ Plan the program integration
- ♦ Plan logistics
- ♦ Deliver and install the software
- ♦ Provide the training necessary for all users to be comfortable with the software
- ♦ Implement the software and monitor its progress
- ♦ Evaluate the program

Following these steps, using the planning forms, and considering the guidance offered in this toolkit will enable technology to continuously improve the instruction and business processes of 21st century educational institutions.

APPENDIX I:

TIMELINE MODEL FOR SOFTWARE IMPLEMENTATION PLANNING

Hypothetical 15-month Program

Month	1 Apr	2 May	3 Jun	4 Jul	5 Aug	6 Sep	7 Oct	8 Nov	9 Dec	10 Jan	11 Feb	12 Mar	13 Apr	14 May	15 Jun
1 Determine objectives and stakeholder buy-in	Do	Do													
2 Integration planning		Plan	Plan												
3 Logistics planning		Plan	Plan	Plan					Plan						
4 Delivery and installation of software			Plan	Do	Do										
5 Professional development			Plan	Plan	Do				Do						
6 Implementation monitoring and software support						Do	Do	Do	Do	Do	Do	Do	Do	Do	
7 Program evaluation			Plan	Plan	Plan			Do			Do			Do	Do

APPENDIX II: THE SOFTWARE IMPLEMENTATION CHECKLIST FOR EDUCATORS

√	1. OBJECTIVES and BUY-IN
	Develop a clear statement of your institution's vision, purpose, and goals for using the software.
	Verify that the software vendor has produced a clear statement of the purpose and goals for the software, and that it is a close match to your own.
	Evaluate the software to determine whether it matches with your vision, purpose and goals, including review of the research behind the software as well as the research of its effective impact in learning or work settings similar to those in which you will use it.
	Develop metrics for each goal against which success can be evaluated.
	Obtain a commitment from the staff supporting, using, and benefiting from the software that it meets needs important to them and that they are prepared to make the effort required to implement it properly.
√	2. INTEGRATION PLANNING
	For instructional applications, match the use of the software to your curriculum and the learning standards it supports.
	Fit the use of the software into the processes its supports, either instructional sequences/practices or administrative procedures.
	Determine the connection between the use of the software and the use of other resources, including other software applications and print materials.
√	3. LOGISTICS PLANNING
	Appoint a Coordinator from your organization who will have the overall responsibility and authority to carry out and monitor the implementation of the software. Designate specific staff responsibilities for professional development, installation, and support of the software. This should include representation from, and coordination between, both the IT support staff as well as the instructional/administrative staff using the software.
	Insist that the vendor also designate a point-person you can contact regularly to answer questions and resolve problems.
	Develop a logistics plan that specifies each step to be taken and its participants, timeline, and budget related to technology readiness, software purchase and installation, professional development, program monitoring and reporting, and program evaluation.
	Verify that your use locations are equipped with the technology infrastructure recommended by the vendor for successful use and maintenance of the product. This would include computer or other devices, network capacity and Internet bandwidth sufficient in quality/quantity for students and educators to access the application to the degree intended.
	Arrange with the vendor for off-site technical problem solving support that can be contacted during the appropriate hours.
	For instructional applications, insure that students can be scheduled to receive the contact time with the software prescribed by the vendor.
	Plan to ensure that the scheduling of the implementation fits well with the institution's calendar and won't be compromised by lack of access due to testing, vacation, or other periods of special activity. Recognize that mid-year implementations may be necessary and appropriate, but could require more time for successful integration into existing processes.
	Verify that the personnel involved in the implementation have the appropriate technology background to successfully learn the operation of the software. If not, develop and institute a training plan to provide those basic technology skills and knowledge.
	Develop an evaluation plan that specifies the following: <ul style="list-style-type: none"> ♦ criteria for successful outcomes from the use of the software ♦ questions to be answered to determine if the criteria have been met ♦ information and metrics needed to answer those questions ♦ methods to be used to gather that information, such as software use data, user performance data, and stakeholder interviews or surveys.

Commit to a multiple-year implementation so that the inevitable start-up issues in the first year can be remedied, with improved results. Adjust evaluation plan to account for this staged approach with expectations for success growing over time.

Budget for multiple-year support, including the following:

- ♦ follow-up training from the vendor (especially for new staff who arrive after the initial training)
- ♦ internal technical support
- ♦ vendor off-site technical support
- ♦ adequate hardware, network, and (if appropriate) Internet bandwidth availability
- ♦ expansion of software licenses to include new users.

√

4. PROFESSIONAL DEVELOPMENT

Provide a thorough orientation for the staff who will implement the product, including the institution's objectives and expectations, and background from the vendor's representative.

Carry out an effective staff training program that includes the following:

For instructional applications –

- ♦ background on the software's instructional design
- ♦ thorough instruction in the operation of the software
- ♦ how and how long to effectively engage students with the software
- ♦ how to integrate the software with other classroom activities.

For administrative applications –

- ♦ background on the software's functional features
- ♦ thorough instruction in the operation of the software
- ♦ how to integrate the software with other administrative procedures.

Provide technical training for internal staff supporting the software's operation.

√

5. INSTALLATION

Conduct a pre-installation check of the hardware, system software, network readiness, and Internet access of all sites where the software will be used.

Schedule the installation of the software on servers and/or work stations such that disruption to normal technology use is minimized.

Verify that all planned installation activity carried out by both the vendor and local staff is completed.

Carry out roll-out activities to alert all staff to the implementation plan and to insure that the initial use of the software goes smoothly.

IMPLEMENTATION & USE -

the point in time when the cycle shifts from planning and preparation to actual scaled use.

√

6. MONITORING AND SUPPORT

Ensure that the Coordinator tracks the progress of the implementation plan, regularly reports on its status, and resolves problems as they arise, involving other decision-makers as appropriate.

For instructional applications, ensure that the software is being used as prescribed, with adequate on-task time for students, and that information generated by the software on student performance is being included in analysis of student progress.

For administrative applications, ensure that the data generated by the software is being included in the analysis of operational metrics.

Provide ongoing professional development as needed, including training and support both specific to the application as well as that more general to the integration of technology into core educational processes and practices. This support could include a forum (virtual and/or in-person meeting time) for school staff to share questions and information and collaborate on effective software use.

Collect information as designated in the evaluation plan

√

7. EVALUATION

Analyze the information collected during the implementation and apply the analysis to answering the planned evaluation questions. Check implementation results against the program's criteria for success.

Use the evaluation results to plan improvements in the next implementation cycle.

APPENDIX III: SOFTWARE IMPLEMENTATION PLANNING FORMS

PLANNING FORM: Identifying Objectives and Stakeholders

Vision For Use of the Software				
Purpose For Using the Software				
High-level Goals to be Achieved				
Objectives	Stakeholders Primary Concerns			
	Students	Teachers	Administrators	Others ...
<i>Student Learning</i>				
<i>Teaching Approach</i>				
<i>Expand Curriculum</i>				
<i>Expand Community Connections</i>				
<i>Business Expense Reduction</i>				
<i>Compliance With Regulations</i>				
<i>Others ...</i>				

PLANNING FORM: Integration Factors

Categories	Current Practices	Integration of New Software
<i>Instructional Applications</i>		
Learning Standards		
Assessment Methods		
Other Tech Programs		
Non-Tech Instructional Materials		
<i>Administrative Applications</i>		
Business Processes		
Staff Responsibilities		
Regulations		
Work Materials		
Accountability Measures		

PLANNING FORM: Work Breakdown Structure

Task #	Task Description	Lead	Staff	Budget*	Start Date	End Date Milestone	Dependencies
1.0	Logistics Planning						
2.0	Delivery & Installation						
2.1	Schedule delivery						
2.2	Site Preparation						
2.3	Accept delivery						
2.4	Install						
2.5	Test & Certify						
3.0	Professional Development						
3.1	Select participants						
3.2	Schedule sessions						
3.3	Collect materials						
3.4	Deliver sessions						
3.5	Collect Feedback						
4.0	Implementation Monitoring						
4.1	Equipment Certification						
4.2	Software Installation						
5.0	Software Support						
5.1	Establish protocols between sites and vendor						
5.2	Vendor maintenance on call						
6.0	Program Evaluation						
6.1	Collect information						
6.2	Analyze information						
6.3	Report findings						

*In addition to the duties of regular personnel

PLANNING FORM: Technology Readiness Survey

Location	Computers	Operating system	Networking connections	Internet access	Printing capability	Other peripherals
School A						
Classroom 1						
Classroom 2						
Classroom 3						
School B						
Classroom 1						
Classroom 2						
Classroom 3						

PLANNING FORM: Delivery and Installation of Software

Hardware	Existing or New	If New, Planned Delivery Date	Date All Components Arrived	Date Hdw Passed for Readiness	Date Software Delivered	Date Software Installed	Date Software Certified
Servers							
Bldg 2 - #1							
Bldg 3 - #1							
Workstations							
Bldg 8 - #1							
Bldg 8 - #2							
Bldg 8 - #3							
Laptops							
Bldg 5 - #1							
Bldg 5 - #2							
Bldg 5 - #3							

PLANNING FORM: Monitoring Software Implementation and Vendor Support

Monitored Item	Person Responsible	Planned Start Date	Actual Start Date	Planned End Date	Actual End Date
Software Delivery					
Location 1					
Location 2					
Location 3					
Software Installation					
Location 1					
Location 2					
Location 3					
Training Registration					
Location 1					
Location 2					
Training Completion					
Location 1					
Location 2					
Evaluation Data Collection					
Student Fall Test Results					
Student Spring Test Results					
Teacher Survey Results					
Budget Analysis					

	Metric	Planned Result	Actual Result
Software Use Logged by Users			
Month 1			
Month 2			
Month 3			
Software Use Logged by System			
Month 1			
Month 2			
Month 3			
% Time Adequate System Performance			
Month 1			
Month 2			
Month 3			
Percent Correct Responses by Students			
By School			
By Class			
Transactions Processed by Staff			
By School			
By Dept			
Average Response Time for Vendor			
Offsite Assistance			
Onsite Assistance			

PLANNING FORM: Educational Software Program Evaluation

Evaluation of Implementation

Indicators	Planned Execution	Actual Execution
<i>Schedule Milestones</i>		
<i>Budget</i>		
<i>Training</i>		
<i>Equipment/Materials</i>		
<i>Access to Software</i>		

Evaluation of Results

Judgment:

Question:	Question:	Question:
Info: Method:	Info: Method:	Info: Method:
Criteria:	Criteria:	Criteria:

APPENDIX IV: RESOURCES

Resources Cited in the Toolkit

Laura Ascione, Assistant Editor, eSchool News

“Study: Ed Tech Has Proven Effective” (September 2006)

The eSchoolNews article summarizes the meta-study ‘Technology in Schools: What the Research Says’ (produced by Cisco Systems and the Metiri Group) and includes comments from other education experts.

2 pages, with link to the meta-study

Retrieved on January 11, 2007

<http://www.eschoolnews.com/news/showStory.cfm?ArticleID=6600>

Consortium for School Networking (CoSN)

Total Cost of Ownership: Taking TCO to the Classroom (ongoing)

The project aims to help school leaders estimate the Total Cost of Ownership involved when purchasing educational technology. Links to the ‘CoSN-Gartner TCO tool’, case studies, and the TCO white paper.

Website and TCO tool (must fill out access request form)

Retrieved on January 11, 2007

<http://www.classroomtco.org/index.html>

John Cradler, Far West Laboratory for the California Department of Education

Implementing Technology in Education: Recent Findings from Research and Evaluation Studies (1996)

This policy brief provides an approach for implementing technology by emphasizing instructional and student needs first. It discusses the importance of planning and also outlines specific steps.

Website (about 15 pages)

Retrieved on January 11, 2007

Available at: <http://www.wested.org/techpolicy/recapproach.html>

Software and Information Industry Association, Education Division

Guidelines for Improving the Request for Proposal (RFP) and Competitive Bidding Process for Educational Technology Products and Services (Spring 2005)

A guide for educational agencies and educational technology vendors in the bidding process, including how each can improve the RFP process and a suggested format and content of a high quality RFP.

23 pages (log-in required)

Retrieved on January 11, 2007

Available at: http://www.siiia.net/education/pubs/RFP_GUIDE.pdf

Software and Information Industry Association, Education Division

Research Report on the Effectiveness of Technology in Schools (2000)

A review of research on the effectiveness of technology in K-12 and higher education and on the effectiveness of specific software design characteristics.

136 pages

Retrieved on February 18, 2007

Available at: <http://www.siia.net/estore/pubs/REF-00.pdf>

Kathleen Holmes, Texas Center for Educational Technology at the University of North Texas, and Don Rawitsch, Vice-President, InterActiveMedia

Evaluating Technology-Based Instructional Programs: An Educator's Guide (1996)

Provides a blueprint for evaluating the impact of technology-based instructional programs, from designing an evaluation to applying the evaluation model.

54 pages, in three parts online

Retrieved on January 11, 2007

<http://www.tcet.unt.edu/pubs/assesmnt.htm>

Vendor Implementation Resources

Carnegie Learning

Ongoing Development Options

Carnegie Learning offers brief guidelines to evaluation and understanding effective implementation of products and services

Website (about 1 page)

Retrieved on April 4, 2007

Available at: http://www.carnegielearning.com/services_pd_ongoing.cfm

Autoskill International, Inc.

Five-Step Implementation Methodology

Autoskill International offers a short implementation model that provides keen insight on how implementation can be done quickly and effectively.

Website (around 3 pages)

Retrieved on April 4, 2007

Available at: <http://www.autoskill.com/intervention/five-step-methodology.php>

PLATO Learning, Inc.

A Guide for Implementing Technology: Or, now that we've got them, what do we do with them? (2003)

PLATO has developed a nine-step planning model for implementing technology in the classroom. Each chapter lists key concepts and planning suggestions.

37 pages

Retrieved on January 11, 2007

Available at: http://www.plato.com/downloads/papers/paper_05.pdf

Other Resources Relevant to Software Implementation

Charleston County School District, Department of Educational Technology
Integrating Technology into the Curriculum (ongoing)

Provides resources about differentiated instruction and technology 'how to' one-pagers (i.e. how to manage the laptop mobile lab). Also see the section 'Curriculum Connections' for best practices projects and software suggestions by subject.

Website

Retrieved on January 10, 2007

Available at: http://www.ccsdedtech.com/tr_index.htm

The Consortium for School Networking

Data-driven Decision Making Initiative: Vision to Know and Do (ongoing)

Designed to educate school leaders about how to collect, understand and use data effectively. Includes articles, case studies, web resources, and CoSN compendiums.

Website, with free e-newsletter available

Retrieved on January 11, 2007

Available at: <http://3d2know.cosn.org/index.cfm>

Education Development Center, Inc., The Center for Children and Technology

An Adventure of the American Mind Program Evaluation and other technology projects (ongoing)

A compilation of research and development projects from the Center for Children and Technology. In American Mind, CCT partners with the Library of Congress to examine effective history teaching around the Library's online archives.

200+ project names and abstracts, searchable by theme

Retrieved on January 11, 2007

Available at: <http://www2.edc.org/CCT/projects.asp>

George Lucas Educational Foundation

Topics: Technology Integration (ongoing)

A nonprofit foundation to encourage innovation in schools, the GLEF has articles, interviews, courseware modules, and evaluation reports on integrating technology into the classroom.

Website, weekly e-newsletter available

Retrieved on January 10, 2007

<http://www.edutopia.org/php/keyword.php?id=137>

International Society for Technology in Education, National Educational Technology Standards (NETS)
NETS and Performance Indicators for Administrators (ongoing)

Following NETS for Students and for Teachers, NETS for Administrators identifies effective leadership for the “comprehensive and appropriate” use of technology in schools. There are links to performance profiles and other NETS documents.

Website

Retrieved on January 11, 2007

Available at: http://cnets.iste.org/administrators/a_stands.html

Larry A. Harris, Virginia

Patterns of Promise (2000)

A panel of experts chose the 12 most outstanding examples of technology use in the southeastern United States. The report was written with Appalachia Educational Laboratory (now Edvantia).

Book, available electronically or in print (\$15)

Retrieved on July 11, 2006

Available at: <http://www.ael.org/rtec/patterns.htm>

Jan Hawkins, Robert Spielvogel, and

Erica Marks Panush, Education Development Center, Inc., Center for Children & Technology

National Study Tour of District Technology Integration: Summary Report (June-July 1998)

Eleven districts are studied to provide models for implementing technology. The article summarizes those findings and includes brief analyses of the four most successful ones.

27 pages

Retrieved on January 11, 2007

Available at: <http://www2.edc.org/LNT/news/Issue4/cct14sum.htm>

James A. Kulik, University of Michigan, for the National Science Foundation

School Mathematics and Science Programs Benefit from Instructional Technology (November 2002)

This InfoBrief summarizes evaluation studies of four types of computer applications in mathematics and science: integrated learning systems, computer tutorials, computer simulations, and microcomputer-based laboratories.

5 pages

Retrieved on January 11, 2007

Available at: <http://www.nsf.gov/statistics/infbrief/nsf03301/>

Torin Monahan, Rensselaer Polytechnic Institute

The Analog Divide: Technology Practices in Public Education (June 2001)

Using the Los Angeles Unified School District as a case study, the author focuses on technology design and how design processes shape educational possibilities. Reprinted from a published article in *Computers & Society*.

10 pages

Retrieved on January 10, 2007

Available at: <http://torinmonahan.com/papers/analog.htm>

National Council for Accreditation of Teacher Education

Technology and the New Professional Teacher: Preparing for the 21st Century (1997)

The report from the 'Task Force on Technology and Teacher Education' evaluates the role of technology in the classroom and teacher education programs. Includes several case studies.

51 pages

Retrieved January 10, 2007

Available at:

http://eric.ed.gov/ERICWebPortal/Home.portal?_nfpb=true&_pageLabel=RecordDetails&ERICExtSearch_SearchValue_0=ED412201&ERICExtSearch_SearchType_0=eric_accno&objectId=0900000b80123992
(Educational Resources Information Center)

National Governors Association for Best Practices

Education Best Practices: Technology in Education (ongoing)

A consulting firm for governors and their policy staff, the Center presents an overview of education technology implementation in various states. Listed on the side are the most recent Center publications that involve technology in education.

Website and publications database

Retrieved on January 10, 2007

Available at: <http://www.nga.org/portal/site/nga/menuitem.1f41d49be2d3d33eacdcbeeb501010a0/?vgnnextoid=56e48cc156de1010VgnVCM1000001a01010aRCRD>

North Central Regional Education Laboratory

NCREL: Technology in Education (2005)

One of ten federally funded laboratories, NCREL provided research and resources regarding assessment, planning, policy, professional development and learning until their contract ended in 2005. Many of their resources remain online and available.

Website

Retrieved on January 11, 2007

Available at: <http://www.ncrel.org/tech/>

Bernard J. Poole (University of Pittsburgh at Johnstown) and Elizabeth Sky-McIlvain, with Lorrie Jackson
Education for an Information Age: Teaching in the Computerized Classroom, 5th ed. (July 2004)

Designed as pre-service/in-service for the K12 teacher, the online book overviews several aspects of integrating technology. Recommended is the section, "Computer-Integrated Teaching and Learning: The Eight Pillars of Success," located on pg. 387 in Chapter 14.

421 pages

Retrieved on January 11, 2007

Available at: <http://www.pitt.edu/~edindex/InfoAge5frame.html>

Sherri Quiñones and Rita Kirshstein, American Institutes for Research,
prepared for the U.S. Department of Education

An Educator's Guide to Evaluating the Use of Technology in Schools and Classrooms (December 1998)

Although a little dated, the guide gives a general and thorough introduction to the integration and evaluation process for educational technology. Designed for educators or administrators at the district or school level.

121 pages (pdf) or separated by chapter online (html)

Retrieved on January 11, 2007

Available at: <http://www.ed.gov/pubs/EdTechGuide/index.html>

Public Broadcasting Service (PBS) TeacherSource

TeacherSource: Teaching and Technology, Educational Technology (ongoing)

A handy site for quick links to a variety of web resources about educational technology. See 'Evaluating Programs and Practices' for a list of links about implementation.

Website

Retrieved on January 10, 2007

Available at: <http://www.pbs.org/teachersource/teachtech/research.shtm>

Cathy Ringstaff and Loretta Kelley, WestEd Regional Technology in Education Consortium
The Learning Return on Our Educational Technology Investment: A Review of Findings from Research (2002)

This paper summarizes major research findings related to technology use to describe the conditions that need to be in place for computer-based technology to be most effective. Primarily intended for those trying to develop school or district technology plans.

30 pages

Retrieved on January 11, 2007

Available at: <http://www.wested.org/cs/we/view/rs/619>

Southern Regional Education Board Educational Technology Cooperative

EvaluTech: Evaluation Review Criteria (ongoing)

A collaborative effort from several states, EvaluTech provides reviews for a variety of teaching materials, including software. Its Review Criteria links to a number of checklists and guides for evaluating software.

Website

Retrieved on January 11, 2007

<http://www.evalutech.sreb.org/criteria/index.asp>

TeAchnology, Inc.

The Online Teacher Resource: Educational Technology (ongoing)

Along with offering free lesson plans, worksheets and rubrics, the web portal has links for reviewing software, evaluating educational technology, as well as online projects and best practices.

Website, teacher message boards, and membership options to access exclusive materials

Retrieved on January 10, 2007

Available at: http://www.teach-nology.com/teachers/educational_technology/

TechLearning.com (Technology & Learning Magazine)

TechLearning: The Resource for Education Technology Leaders

The web portal of Technology & Learning Magazine provides articles and resources, organized by position: teacher, tech coordinator, and administrator, respectively.

Website and online access to monthly magazine

Retrieved on January 11, 2007

Available at: <http://www.techlearning.com/>

APPENDIX V:

SIIA EDUCATION DIVISION MEMBERS

- ♦ ABC-CLIO
- ♦ Academic Benchmarks
- ♦ Academic Business Advisors, LLC
- ♦ Adibi Communications
- ♦ Adobe Systems, Inc.
- ♦ AMDG, Inc.
- ♦ ANGEL Learning, Inc.
- ♦ Answers Corporation
- ♦ Apangea Learning
- ♦ Apple Education
- ♦ Arc Capital Development
- ♦ ASAP Software
- ♦ Atomic Learning
- ♦ Autoskill International, Inc.
- ♦ Behrman House Inc. - eMedia Division
- ♦ Bert Davis Executive Search
- ♦ Blackboard Inc., K-12
- ♦ BLEgroup
- ♦ Bonsal Capital
- ♦ Boston Search Group, Inc.
- ♦ Boston Ventures Management, Inc.
- ♦ C. Blohm & Associates, Inc.
- ♦ Carnegie Learning, Inc.
- ♦ Carolina Software As A Service, Inc.
- ♦ Catalyst Consultants
- ♦ CDW Corporation
- ♦ Cisco Systems
- ♦ ClassLink, Inc.
- ♦ ClearEmployment LLC
- ♦ College Board - SAT Readiness Program
- ♦ CollinsConsults
- ♦ CompassLearning
- ♦ Computer Power Solutions of Illinois
- ♦ Congressional Information Services, Inc. dba Academic & Library Solutions, Inc. (LexisNexis Group)
- ♦ Consulting Services for Education
- ♦ Contextual Connections, LLC
- ♦ Curriculum Advantage
- ♦ Curriculum Associates, Inc.
- ♦ CyberSmart Education Company LLC
- ♦ Decision Tree Media, Inc.
- ♦ Digital Directions International
- ♦ Digital Millennial Consulting
- ♦ Digital Pie
- ♦ Distance Learning, Inc.
- ♦ Driver Public Relations
- ♦ E.T.C. International
- ♦ eChalk, Inc.
- ♦ Education Capital Group LLC
- ♦ Education Networks of America (ENA)
- ♦ Education TURNKEY Systems, Inc.
- ♦ Educational Consulting Services
- ♦ Educational Systemics, Inc.
- ♦ Educational Technology Marketing
- ♦ EducationPLAZA
- ♦ Eiseman Levine Lehrhaupt & Kakoyiannis, P.C.
- ♦ eMeta Corporation, a Division of Macrovision Corporation
- ♦ Empirical Education Inc.
- ♦ Encyclopaedia Britannica, Inc.
- ♦ eSchoolMall
- ♦ eSpindle Learning
- ♦ Excelsior Software, Inc.
- ♦ Faronics Corporation
- ♦ Ferrio Associates
- ♦ FileMaker, Inc.
- ♦ Focus Marketing
- ♦ Foley & Lardner LLP
- ♦ FutureKids Inc.
- ♦ Giant Campus, Inc.
- ♦ Go.edu, Inc.
- ♦ Gourmet Curriculum Press, Inc.
- ♦ The Greaves Group
- ♦ HCI Productions OY
- ♦ Headsprout, Inc.
- ♦ Headway Strategies
- ♦ Heinemann-Raintree
- ♦ Hotmath, Inc.
- ♦ Houghton Mifflin Company
 - ♦ Great Source Education Group
 - ♦ Houghton Mifflin College Division
 - ♦ Houghton Mifflin Trade & Reference Division
 - ♦ Houghton Mifflin School Division
 - ♦ McDougal Littell
 - ♦ Riverside Publishing
 - ♦ Houghton Mifflin Learning Technology
 - ♦ Riverdeep
 - ♦ Broderbund
 - ♦ Edmark Corporation
 - ♦ SmartStuff Software
 - ♦ Teacher Universe
 - ♦ Vantage Points Language Arts
 - ♦ Houghton Mifflin International Division

- ♦ IBM Corporation
- ♦ identiMetrics, Inc.
- ♦ Information House Research
- ♦ Inspiration Software, Inc.
- ♦ Intel Corporation
- ♦ Interactive Educational Systems Design, Inc. (IESD)
- ♦ Jenzabar, Inc.
- ♦ Kaplan K12 Learning Services
- ♦ KC Management Group
- ♦ Knowledge Delivery Systems, Inc.
- ♦ Learning Enhancement Corporation
- ♦ Learning Through Sports
- ♦ Learning.com
- ♦ Ligature Partners
- ♦ Market Data Retrieval (MDR)
- ♦ MarketingWorks, Inc.
- ♦ MathResources, Inc.
- ♦ The McGraw-Hill Companies, Inc.
 - ♦ McGraw-Hill Assessment and Reporting
 - ♦ CTB/McGraw-Hill
 - ♦ The Grow Network
 - ♦ Glencoe/McGraw-Hill
 - ♦ McGraw-Hill EDUCATION
 - ♦ McGraw-Hill Professional Development (MHPD)
 - ♦ McGraw-Hill Higher Education Group
 - ♦ McGraw-Hill Learning Network
 - ♦ McGraw-Hill Professional Publishing Group
 - ♦ The Wright Group / McGraw-Hill
- ♦ MetaMetrics, Inc.
- ♦ MIND Institute
- ♦ Montgomery College
- ♦ Muzzy Lane, Inc.
- ♦ National Center for Science, Literacy, Education and Technology
- ♦ Oracle USA
 - ♦ Oracle Academy
- ♦ Pat Walkington Education Sales & Marketing
- ♦ PBS – Teacherline
- ♦ Pearson School Companies
 - ♦ Pearson Achievement Solutions
 - ♦ Pearson AGS Globe
 - ♦ Pearson Assessments
 - ♦ Pearson Digital Learning
 - ♦ Pearson Educational Measurement
 - ♦ Pearson Knowledge Technologies
 - ♦ Pearson Learning Group
 - ♦ Pearson Prentice Hall
 - ♦ Pearson School Systems
 - ♦ Pearson Scott Foresman
- ♦ PerceptIS, LLC
- ♦ Phase-6, Inc.
- ♦ PLATO Learning Inc.
 - ♦ CyberEd, Inc.
- ♦ Pokemon USA, Inc.
- ♦ Promethean Inc. (USA)
- ♦ ProQuest Education
 - ♦ ExploreLearning.com
 - ♦ Learning Page
 - ♦ Voyager Expanded Learning
- ♦ Rawitsch Consulting
- ♦ Red Hat, Inc.
- ♦ RedRock Reports
- ♦ Reed Elsevier
 - ♦ Ginn & Company
 - ♦ Harcourt Education Group
 - ♦ Classroom Connect, Inc.
 - ♦ Harcourt Achieve
 - ♦ *Rigby*
 - ♦ *Steck-Vaughn*
 - ♦ Harcourt Assessment, Inc.
 - ♦ Harcourt School Publishers
 - ♦ Holt, Rinehart and Winston
 - ♦ Harcourt Interactive Technology
 - ♦ Reed Educational and Professional Publishing
 - ♦ School Library Journal
- ♦ Reviews.com
- ♦ Ripple Effects, Inc.
- ♦ RM Educational Software
- ♦ Ruppelt Consulting
- ♦ Saferock USA, LLC
- ♦ Sanako Corporation
- ♦ SAS Institute, Inc.
 - ♦ SAS in School
- ♦ Sassafras Software, Inc.
- ♦ Scantron Corporation Testing & Assessment Division
- ♦ Scholastic Education – Curriculum
 - ♦ Quality Education Data, Inc.
 - ♦ Tom Snyder Productions
- ♦ SchoolDude.com
- ♦ SchoolNet, Inc.
 - ♦ SchoolNet, Inc. - Human Capital Business Unit
- ♦ Seacliff Educational Solutions
- ♦ Seeds Software
- ♦ Shore Communications, Inc.
- ♦ Simba Information Inc.
- ♦ Six Red Marbles
- ♦ SMART Technologies, Inc.
- ♦ SMARTHINKING
- ♦ Software Technology, Inc. (STI)
- ♦ Somatic Digital, LLC

- ♦ SRI International - Center for Technology in Learning
- ♦ Starry Night Education
- ♦ Strategic News Service - Project Inkwell
- ♦ Tabula Digita
- ♦ TeachAde
- ♦ Tech4Learning, Inc.
- ♦ TeleParent Educational Systems
- ♦ Texas Instruments, Inc. - Education & Productivity Solutions Business
- ♦ Texthelp Systems, Inc.
- ♦ Thinkronize / netTrekker
- ♦ Thomson Corporation
 - ♦ Atomic Dog Publishing
 - ♦ Forlaget Systime A/S
 - ♦ Prometric
 - ♦ South-Western Educational Publishing Company
 - ♦ Thomson Gale
 - ♦ Thomson Higher Ed
 - ♦ Thomson ISI
 - ♦ Thomson Learning
 - ♦ Delmar -a division of Thomson Learning
 - ♦ Publishers Resource Group Inc.
 - ♦ Thomson BROOKSCOLE
 - ♦ Thomson Wadsworth
- ♦ Time Warner, Inc.
 - ♦ AOL@SCHOOL
 - ♦ Time For Kids
 - ♦ Turner Learning, Inc.
- ♦ Timecruiser Computing Corporation
- ♦ Trailblazer Learning
- ♦ Tutor.com
- ♦ Upromise
- ♦ The van Tulleken Company
- ♦ VIP Tone, Inc.
- ♦ VitalSource Technologies
- ♦ WILL Interactive, Inc.
- ♦ Winter Group
- ♦ Wireless Generation
- ♦ Words & Numbers

