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SECTION FIVE

Technologies Enabling the Use of Educational Data

How to Use This Module:

The professional development curriculum for *Technologies Enabling the Use of Educational Data* may be used in facilitated group sessions or by individuals in self-directed study. To ensure that the professional development curriculum is properly administered, a ***Facilitator's Guide*** and a ***Facilitator's Checklist*** are provided for group sessions, and a ***Self-Directed Learner's Guide*** and a ***Self-Directed Learner's Checklist*** are provided for individuals using the professional development curriculum in the self-paced mode.

For both methods, three core teaching tools are used: ***Direct Teach*** content, a ***Checking for Understanding Worksheet***, and an ***Application Worksheet***. These core tools are augmented by a variety of materials listed in the ***Section Resources***. We recommend that you review the content in this section and use the professional development method that best meets your district's or school's needs.

Section Objectives:

1. Develop an understanding of how technology tools and solutions support the building and sustaining of a data-rich culture.
2. Develop an understanding of best practices for selecting and implementing technology solutions.
3. Identify technology tools/resources that enable the effective use of educational data at the district, school, and classroom levels, for example, Student Information System (SIS) and Learning Management System (LMS) solutions, student/parent portals, student response systems, electronic whiteboards, bring your own technology (BYOT), and data dashboards.

Section Objective 1: Develop an understanding of how technology tools and solutions support the building and sustaining of a data-rich culture.

With 21st century education being driven by accountability for results, educational data is essential for monitoring students' progress toward successfully meeting standards, closing achievement gaps, and securing public support based on student achievement. Therefore, school administrators and teachers are under increasing pressure to make certain that students meet academic standards; the accountability requirements of the federal government; and the achievement demands of parents, school boards, and the local community.

According to research conducted by Gartner, Inc. (2011a), districts and schools are currently using SIS solutions for collecting, managing, and reporting data, including submitting data to their respective state education agencies for accountability purposes. They are using LMS solutions for the organization and delivery of learning activities as well as for collecting data from the instructional setting. However, the research reflects that school administrators and teachers tend to look at both types of systems as transactional requirements, used primarily for attendance and grade reporting.

The research also indicates that while data reporting systems are in place in many schools, they are not being used to their fullest extent by educators to inform instruction, monitor students' progress in achieving standards, and provide meaningful feedback to students. Of the teachers surveyed, 25% reported they only used LMS solutions because they were required to do so. The implementation of these solutions in schools follows a clear trend of providing educational data to teachers on the premise that providing them with data improves instructional practice and results in improved student outcomes. But, educators need more timely, user-friendly, data-based information as well as professional development and training on how to effectively use data collection and management systems to support

and enhance teaching and learning. When teacher training takes place, teachers do see LMS solutions as helping them to be more effective (62%), save time (55%), and increase student achievement (50%) (Gartner, Inc., 2011a).

The use of data and the development of an understanding of how technology tools and solutions support the building and sustaining of a data-rich culture take on different roles and challenges at the district, school, and classroom levels. The practice of using educational data has long been supported by research. As far back as the 1980s Ron Edmonds indicated that in effective schools, "Feedback on student progress is frequently monitored…(and) the results of testing are used to improve individual student performance and…instructional programs" (Bullard and Taylor, 1993). More recently the research of Sharnell Jackson, CEO of Data-Driven Innovations Consulting, and Ellen Mandinach, senior research scientist at WestED (2010), has shown that building a data-rich culture to support instructional decision-making has five key elements:

- Developing and maintaining a district-wide data system.
- Providing supports that foster a data-driven culture within the school.
- Establishing a clear vision for school-wide data use.
- Making data part of an ongoing cycle of instructional improvement.
- Teaching students to examine their own data and set learning goals.

The Institute for Educational Sciences (IES) Practice Guide: *Using Student Achievement Data to Support Instructional Decision Making* (Hamilton et al., 2009) provides a framework for using student achievement data to support teachers' instructional decision-making. IES Practice Guide Recommendation 5 suggests developing and maintaining a district-wide data system (IES Practice Guide, 2009, p. 40). To support this recommendation, the following actions are suggested:

- Involve stakeholders in the selecting of a data system.
- Clearly articulate system requirements relative to user needs.
- Determine whether to build or buy the data system.
- Plan and stage the implementation of the data system.

When data solutions are selected and implemented effectively, their functions can be maximized to support student academic achievement and teacher success while building a data-rich culture. The following outcomes are examples of how the solutions can influence student achievement:

- Provide teachers, students, and parents regular access to educational data that serves to inform the actions of each stakeholder.
- Serve to provide feedback loops between the instructional process and curriculum and learning targets.
- Enable data-driven decision-making at the classroom, school, and district levels.
- Enable data dashboards that provide a snapshot in time of student, teacher, school, and/or district success or needs for improvement.

Section Objective 2: Develop an understanding of best practices for selecting and implementing technology solutions.

Districts and schools continue to recognize the value of leveraging technology solutions ultimately in support of student academic success. Increasingly district and school leaders understand the importance of:

- The strategy cycle for program management and change management for use of the technology solution(s).
- Understanding how the solutions support the building of a data-rich culture at the district, school, and classroom levels.

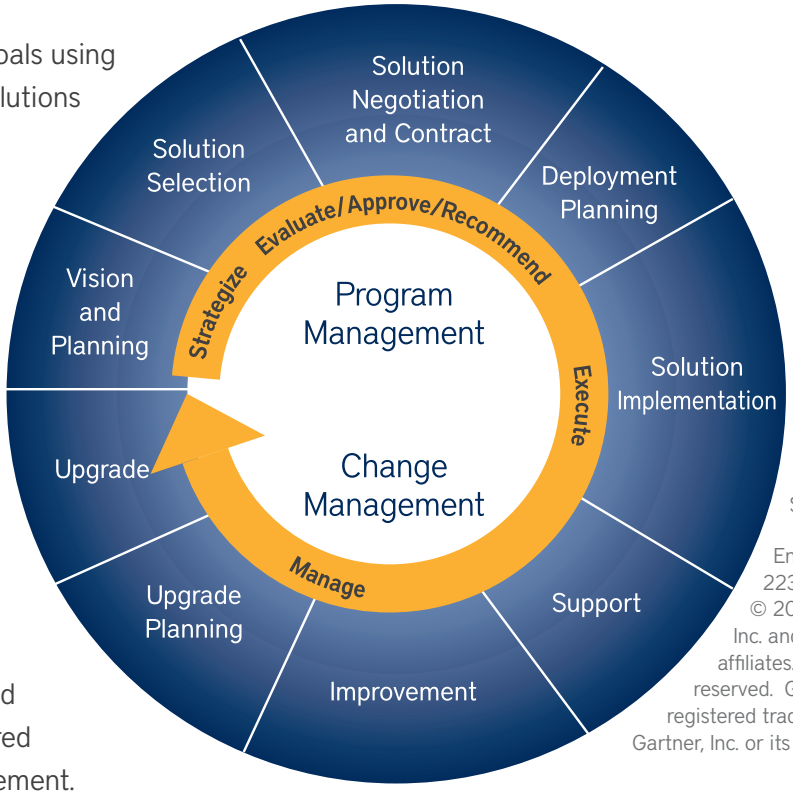
Examples of technology solutions that are being fostered at the district, school, and or classroom levels include SIS, LMS, assessment systems, and/or longitudinal data systems. Data collection and reporting solutions are key to enabling the effective use of educational data at all educational levels. SIS and LMS, when integrated into a district's overall data culture and infrastructure, can be essential tools in facilitating the systemic use of data to improve student achievement. *The Education Community Attitudes Toward SIS and LMS Solutions* report (Gartner, Inc., 2011a) defines the SIS and LMS solutions as follows:

- **SIS:** A software application for the collection, organization, and management of student data that includes, but is not limited to, student schedules, enrollment, course history, achievement profile, grades, attendance, and demographic information.
- **LMS:** A software application used by education institutions for planning, delivering and managing, tracking, and reporting learner events, e-learning programs, educational records, and training content. LMS solutions support a variety of instructional resources and settings, including virtual, hybrid, online, and/or instructor-led instructional settings. Online assessment, management of continuous professional education, collaborative learning, and training resource management (such as facilities and equipment) are all tracked and managed using LMS solutions.

The Implementation and Selection Approaches to SIS/LMS Solutions report (Gartner, Inc., 2011b) reflects that information technology (IT) solution implementations go through a multiyear life cycle that includes developing a strategy, evaluating and selecting solutions, implementing the solutions, and managing the solutions for effective usage and benefits attainment. Solutions management best practices include the following:

- Organizations should strategize on how to achieve student learning needs and goals using the data provided by these solutions early in the selection and implementation process.
- In general, a cross section of stakeholders from senior leadership, administrative, instructional, and IT areas should participate in the solution management life cycle and, specifically, in the solution selection process.
- Program or project management is required for successful implementation, and change management is required for successful benefits achievement.

Solution Management Lifecycle



Source:

As technology solutions for data management are growing, schools need to set goals for the collection, use, and storage of data, and then decide which solutions meet their needs, all in support of effectively using educational data to foster student academic success. The *Fairfax County Public Schools Video Exemplar* is an example of the effective use of technology solutions, presenting the district's vision for and implementation and use of its SIS/LMS solutions. The information in *Implementation and Selection Approaches to SIS/LMS Solutions* (Gartner, Inc., 2011b) allows schools and districts to sort through the maze of possibilities by:

- Gaining a more complete understanding of the current state of SIS and LMS solutions and how the data provided by these solutions is used in the classroom by teachers to achieve desired educational outcomes.

- Moving beyond their current state of data management and reporting and adopting new practices that will lead to realizing state, district, and school goals for using SIS/LMS data to strengthen instructional practices.
- Implementing best practices for using SIS/LMS data to inform classroom practice.

The process for selecting and implementing these or any solution can be complicated and requires the district to make a significant investment in time, finances, and human resources. To help navigate this process, districts can use the *Project Milestones and Timeline Guide* to reflect on project phases. The guide provides the five project phases and related milestones for each phase, which are noted in the graphic below.

The guide can be used in the following ways:

- Serves as a checklist for the minimal components that should be included in the project schedule and informs content for more detailed project plans and schedules.

Project Phases

Project Milestones	Project Initiation	Project Planning	Project Execution	Project Monitoring & Control	Project Closeout & Support
	• Approved goals, objectives and guiding principles • Approved summary level cost estimation • Secured project sponsor • Accomplishments and upcoming milestones communicated to district leadership	• Defined project team with defined resources • Established project steering committee with assigned resources • Baseline project plan and schedule • Past accomplishments and upcoming milestones communicated to stakeholders	• Defined governance structure with assigned resources (includes steering committee, project team, stakeholders, etc.) • Defined project steering committee with defined resources • Baseline project plan and schedule • Detailed functional and technical requirements • Technical application selected • Configured application with clean data • Updated educational policies and procedures • Completed system training and professional development • Past accomplishments and upcoming milestones communicated to stakeholders	• Defined project metrics • Quality Assurance Plan • Completed Corrective Actions • Past accomplishments and upcoming milestones communicated to stakeholders	• Sign-off or approval of all project outputs and outcomes • Populated Repository of Completed Project Documentation • Staff Professional Development/Training • Past accomplishments and upcoming milestones communicated to stakeholders

- Serves as an input to the project cost estimate (that is, think through the personnel, training/professional development, software, and hardware implications/costs associated with each phase of the project).

An example of the Project Initiation phase is provided below.

Project Initiation: The Project Initiation phase includes tasks associated with defining the project's goals and outcomes, and securing necessary funding. The purpose of this step is to document the project's goals and expected outcomes in a manner that helps secure necessary funding.

- Milestones:
  - Approved rationale, goals, objectives, and guiding principles.
    - The *Goals Workshop* template, another assistance template, can be used to help facilitate the discussions needed to identify the projects goals, objectives, and guiding principles.
  - Approved summary level cost estimation.
    - The *Solution Implementation Cost Planning Guide* and associated template can be used to help think through the major cost items associated with your district's implementation.
  - Secured project sponsor.
  - Accomplishments and upcoming milestones communicated to district leadership.

Deliverables:

- Project Charter: Description.

Accountable Resource(s):

- District Superintendent
- Project Sponsor: Description/definition

The choices for data management are many. To use data management solutions effectively, it is important for schools to set goals for the collection, use, and storage of data and then decide which solutions meet their needs. Collectively, the interviewees in the *Fairfax County Public Schools Video Exemplar* convey their district's vision for and implementation and use of its SIS/LMS solutions.

To use data more effectively and develop an understanding of how technology tools and solutions support building and sustaining a data-rich culture, there are different roles that must be performed and challenges that must be addressed at the district, school, and classroom levels:

- School boards and superintendents use educational data to focus on policies and resources necessary to move the vision, mission, and standards-based curriculum forward.
- Technology, financial, and human resources leaders are concerned with providing state-of-the-art instructional tools and efficient systems for storing, collecting, and using data in a timely and economical manner.
- Principals and school leaders are interested in supporting well-functioning Professional Learning Communities (PLCs) and data teams to inform instructional decisions.
- District leaders look for data-based proposals and recommendations from these groups to help lower achieving subgroups or provide enrichment for high-achievers.
- Teachers use technological solutions to engage their students in the learning process and access standards-based data to inform their instruction and monitor their students' progress toward meeting curriculum standards or learning targets.

Recommended Best Practices for Selecting and Implementing Technology Solutions

DISTRICT AND IT LEADERS:

- Plan for a district-wide data solution that is comprehensive and integrated, linking disparate forms of data for reporting and analysis to a range of audiences.
- Involve a variety of stakeholders in determining the key functions of the data solution.
- Base the system's requirements on user needs that support educational achievement.
- Identify the appropriate financial and human resources needed to develop safeguards that ensure data are timely, relevant, and useful to educators.
- Determine whether to build or buy the data solution. Either approach may have hidden costs, such as additional time to build a personalized system or the need to buy add-ons so that an off-the-shelf purchase will better meet the articulated functional requirements.
- Consider the technical requirements for the effective and efficient operation of your district-wide data solution.

SCHOOL LEADERS:

- Establish a clear vision for school-wide data use. Set the tone for effective data use to define critical teaching and learning concepts.

- Provide supports that foster a data-driven culture within the school, such as structured time for teacher teams to meet and discuss data, and targeted professional development to support data collection and use goals.
- Support the data analysis cycle. Implement an inquiry-based framework to include preparation, analysis, and action planning for data use with the support of school-wide data teams and PLCs.
- Engage stakeholders in the uses of the data system to report information. Consider the following users:
    - Counselors and support staff who place students into classes based on prior performance and current schedule restrictions and who use attendance and assessment data to identify students for targeted interventions.
    - Teachers who will want to identify individual student and class strengths and weaknesses, and interact with other staff about student progress.
    - Students and parents who will want to review scores on recent assessments, track progress on reaching standards, and compare student performance over time.
    - Administrators who will track discipline referrals and compare rates of discipline referrals among different groups of students.

CLASSROOM LEADERS:

- Make data part of an ongoing cycle of instructional improvement.
- Teach students to examine their own data and set learning goals based on standards-based item analysis reports.
- Use data to foster and monitor continuous instructional improvement and individualized approaches based on research, evidence, and action plans.
- Understand and use a variety of data reports to diagnose learning and achievement roadblocks.

Section Objective 3: Identify technology tools/resources that enable the effective use of educational data at the district, school, and classroom levels, for example, SIS/LMS solutions, student/parent portals, student response systems, electronic whiteboards, bring your own technology (BYOT), and data dashboards.

Many districts and schools are continuing to identify and leverage different types of technology tools and resources that assist and/or enable the effective use of educational data by multiple stakeholders. The following instructional, learning management, and administrative tools are examples of resources that can enable the effective use of educational data at the district, school, and/or classroom levels.

Instructional Tools

The evolution of the computer, stand-alone technology tools, and the Internet is migrating teachers from being the "sage on the stage" to the "guide on the side" or "facilitator" of instruction. Students are no longer just being taught information, but rather how to become an active participant in monitoring their learning trajectory with access to appropriate educational data and related tools.

- The electronic whiteboard gives teachers the ability to share a summary of the results of assessments and/or rubrics to be used with students. Using an electronic whiteboard, students can also participate in peer learning that fosters students' collaboration on what they know and the regular identification of gaps in their learning. In addition, interactive whiteboards allow teachers or students to record the lesson and post it for review by students when the assessment process has reflected the need for reteaching.
- Student response systems are handheld instructional tools (for example, clickers that allow students to quickly provide information on their progress toward the learning target to be viewed safely by the teacher and their peers). For students who may be reluctant to communicate gaps in reaching the learning target, student response systems provide a way for them to communicate with the teacher where they are not being successful in a safe way. When used effectively, these systems can also serve as a tool of the regular formative assessment process within day-to-day teaching.
- As many districts and schools are planning for allowing students to bring their own technology or device to school and connect with the district's network, students have ready access to their educational data through the student portal, which is often accessed through the SIS and/or LMS. In these cases, students no longer need to wait until a computer is available to access their information while they are at school (for

example, in classrooms or the media center). Within the student portal, it is possible for them to regularly monitor their own formative, interim, and/or state assessments. The portals are often also available to parents so they are aware of their student's academic successes along with gaps in his or her learning.

Learning Management Tools

Software such as LMS or assessment systems may allow for the management of grade books, curriculum maps, lesson plan builders, e-portfolios, online assessments (such as common, benchmark, or formative assessments), and subsequent analysis of assessment data results. In support of the effective use of educational data, they often have the ability to:

- Measure student progress on multiple choice, problem-based, normed/criterion, teacher-made or commercial assessments.
- Disaggregate and analyze results by demographic subgroup by district, school, grade level, teacher, class, and school year.
- Import state summative data for comparison of local student performance and state test scores and/or report academic achievement to stakeholders by identifying students performing below, at, or above performance levels.

Administrative Tools

Tracking attendance, behavior management, and demographic data is important in determining school policies, informing instruction, and closing achievement gaps. Data dashboards are a popular solution for managing various types of administrative and educational data. Used alone or in conjunction with a data analysis program, they allow district and school administrators and classroom teachers to compare student performance on classroom assessments with performance assessments such as district common and/or benchmark assessments and yearly state assessments.

5 Section Resources

References

Bullard, P. & Taylor, B. (1993). *Making reform happen*. New York, NY: Allyn and Bacon.

Gartner, Inc. (2011a). *Education community attitudes toward SIS/LMS solutions*. Retrieved from *Closing the Gap: Turning Data Into Action*.

Gartner, Inc. (2011b). *Implementation and selection approaches toward SIS/LMS solutions*. Retrieved from *Closing the Gap: Turning Data Into Action*.

Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE 2009-4067). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Sindelar, N. (2011). *Using test data for student achievement: Answers to No Child Left Behind and common core standards*. (2nd ed.). Lanham, MD: Rowman and Littlefield.

Closing the Gap Report

SIS/LMS Industry Market Overview

Closing the Gap Templates

Goals Workshop

Guide to Professional Development and Training

Project Milestones and Timeline Guide

Solution Implementation Cost Planning Guide

Closing the Gap SIS/LMS Solutions

LMS Vendor Product Functionality Chart

LMS Vendor Product Summaries

SIS Vendor Product Functionality Chart

SIS Vendor Product Summaries

District Case Study

Richmond County Public Schools Case Study

District Videos

Fairfax County Public Schools Video Exemplar

Henry County Schools Video Exemplar

5 Checking for Understanding Worksheet

Direct Teach Reflection: Technology tools and solutions support building and sustaining a data-rich culture. However, the identification of technology tools and resources that enable the effective use of educational data at the district, school, and classroom levels requires collaboration, thought, and research. The choices for data management solutions are increasing in their roles and complexity. This requires districts and schools to set goals for the collection, use, and storage of data and then decide which of the many solutions meet their needs for effectively enabling the use of data toward student academic success.

After reading and reflecting on the *Direct Teach* content, apply what you have learned in the following *Checking for Understanding Worksheet* exercises.

1. List the five key elements for building a data-rich culture that supports instructional decision-making.

2. Describe how the *Fairfax County Public Schools Video Exemplar* demonstrates a district's vision for using technology tools to support student success.

3. There are different roles and challenges at the district, school, and classroom levels for using data, technology tools, and solutions to support building a data-rich culture. List two best practices for each level.

   DISTRICT:

   SCHOOL:

   CLASSROOM:

5 Application Worksheet

Direct Teach Reflection: Technology tools and solutions support building and sustaining a data-rich culture. However, the identification of technology tools and resources that enable the effective use of educational data at the district, school, and classroom levels requires collaboration, thought, and research. The choices for data management solutions are increasing in their roles and complexity. This requires districts and schools to set goals for the collection, use, and storage of data and then decide which of the many solutions meet their needs for effectively enabling the use of data toward student academic success.

After reading and reflecting on the *Direct Teach* content, apply what you have learned in the following *Application Worksheet* exercises.

1. List the major functions for which the SIS and/or LMS system in your district or school are currently being used to support an increase in student academic achievement.

2. List recommended changes that your district or school should consider implementing to its current SIS and/or LMS solutions that will support an increase in student academic achievement.

3. The Project Initiation phase includes tasks associated with defining the project's goals and outcomes and securing necessary funding. Describe your district's or school's goals and the intended outcomes, and identify a logical source of funding.

5 Facilitator's Guide

Meeting Objectives:

1. Develop an understanding of how technology tools and solutions support the building and sustaining of a data-rich culture.
2. Develop an understanding of the best practices for selecting and implementing technology solutions.
3. Identify technology tools/resources that enable the effective use of educational data at the district, school, and classroom levels, for example, SIS and LMS solutions, student/parent portals, student response systems, electronic whiteboards, bring your own technology (BYOT), and data dashboards.

Meeting Preparation

The professional development process for turning educational data into action should be led at every level by a team that pairs an instructional leader with a district- or school-level information technology (IT) leader. These chosen facilitators will participate in the identification of other district, school, and classroom leaders, who will form the Professional Development Facilitation Team. This cadre of professional development facilitators will be responsible for leading professional development at the district, school, and classroom levels. These leaders should consider the vision and goals that the district and schools have for building a data-rich culture prior to administering the professional development curriculum.

To help the participants prepare for the meeting, the facilitators should ask them to complete the following assignments before attending the meeting:

- Read the *Direct Teach* content for Section Five.
- Complete the *Checking for Understanding Worksheet*.
- Read the *Richmond County Public Schools Case Study*.

Meeting One: Develop an understanding of how technology tools and solutions support the building and sustaining of a data-rich culture.

(Approximate meeting time: 2 hours.)

1. Review *Direct Teach* content.
2. At the beginning of the meeting, ask participants to discuss the *Richmond County Public Schools Case Study* and focus on the reasons the district expressed for changing its SIS system. Emphasize the statement below regarding "achieving efficiency improvements." Then ask participants to share the ideas that they recorded on the *Checking for Understanding* Worksheet regarding efficiency improvements in their district or school.

   > The replacement of the legacy SIS was based on a vision of achieving efficiency improvements. The 'first order' benefits of improving administrative and operational processes resulted in stakeholder engagement and buy-in needed to move the project forward. As operational improvements are achieved and a formalized program is developed on the use and analysis of data, other benefits of the SIS will be realized. Benefits such as the ability to use SIS/LMS data to improve instructional practice are typically 'second order' benefits, in that they arise from having these foundational elements in place, and after initial productivity improvements resulting from improved accuracy and integration of administrative and demographic information have been achieved.

3. Next, ask participants to watch the *Fairfax County Public Schools Video Exemplar* and discuss Ms. Maribeth Luftglass' views regarding SIS and LMS solutions as being a "one-stop shop for information."
4. Then ask participants to complete the *Application Worksheet* and share their thoughts on the types of changes that they would recommend for their district's or school's current SIS and/or LMS. If the participants don't have an SIS/LMS, ask that they prioritize the functions they believe would be most important for building and sustaining a data-rich culture.

Meeting Two: Develop an understanding of the best practices for selecting and implementing technology solutions.

(Approximate meeting time: 2 hours.)

1. At the beginning of the meeting, ask participants to discuss the *Fairfax County Public Schools Video Exemplar* and reflect on their vision for implementing their SIS/LMS solutions. Then ask the participants to reflect on how their vision would affect best practices for selecting and implementing technology solutions.
2. Using the responses to Question 3 of the *Checking for Understanding Worksheet*, lead the participants through a discussion about what they believe to be the best practices for using educational data and technology tools to build a data-rich culture at the district, school, and classroom levels.
3. Then ask participants to complete the *Application Worksheet*.
4. Next, using the *Project Milestones and Timeline Guide*, ask the participants to review the Project Initiation phase (diagram) and share how they would define a goal(s) and an outcome(s) of an SIS and/or LMS selection process. Refer to responses from Question 3 of the *Application Worksheet*.

Meeting Three: Identify technology tools/resources that enable the effective use of educational data at the district, school, and classroom levels, for example, SIS and LMS solutions, student/parent portals, student response systems, electronic whiteboards, bring your own technology (BYOT), and data dashboards.

(Approximate meeting time: 2 hours.)

1. Lead the participants in a review of the instructional tools identified in the *Direct Teach* content. Ask participants if they are using the same or similar instructional tools to enable the use of educational data. If so, ask them to elaborate on how they are using the instructional tools. Next, ask participants to describe additional tools they may be using in their district, school, and/or classroom to enhance the use of data by stakeholders (such as students, teachers, and parents).

2. Ask participants to view the *Henry County Schools Video Exemplar* and discuss how Henry County Schools is using an assessment system to support the effective use of educational data by students and teachers.
3. Then ask participants to reflect on what they believe to be the most important functions of administrative tools that assist in informing instruction and/or closing achievement gaps.

Recommended Answers to Questions Presented in the *Checking for Understanding Worksheet*

QUESTION 1:

List the five key elements for building a data-rich culture that support instructional decision-making.

ANSWER:

- Developing and maintaining a district-wide data system.
- Providing supports that foster a data-driven culture within the school.
- Establishing a clear vision for school-wide data use.
- Making data part of an ongoing cycle of instructional improvement.
- Teaching students to examine their own data and set learning goals.

QUESTION 2:

Describe how the *Fairfax County Public Schools Video Exemplar* demonstrates a district's vision for using technology tools to support student success.

ANSWER:

Ms. Maribeth Luftglass says it all when she refers to its system as a "one-stop shop for information." By making this statement, she is implying that the system is efficient, coherent, comprehensive, and user-friendly. The teachers and others in the video support this vision by commenting on the immediacy in which information is retrieved and the practical applications for which the information is being used. The system provides course and assessment information, resources for students, and the ability to engage students in "learning outside the classroom." As a result, "achievement gaps are closing."

QUESTION 3:

There are different roles and challenges at the district, school, and classroom levels for using data and technology tools and solutions to support the building of a data-rich culture. List two best practices for each level.

ANSWER *(Note: Participant would choose any two of the best practices.)*:

DISTRICT:

- Plan for a district-wide data solution that is comprehensive and integrated, linking disparate forms of data for reporting and analysis to a range of audiences.
- Involve a variety of stakeholders in determining the key functions of the data solution.
- Base the system's requirements on user needs that support educational achievement.
- Identify the appropriate financial and human resources needed to develop safeguards that ensure data are timely, relevant, and useful to educators.
- Determine whether to build or buy the data solution. Either approach may have hidden costs, such as additional time to build a personalized system or the need to buy add-ons so that an off-the-shelf purchase will better meet the articulated functional requirements.
- Consider the technical requirements for the effective and efficient operation of your district-wide data solution.

SCHOOL:

- Establish a clear vision for school-wide data use. Set the tone for effective data use to define critical teaching and learning concepts.
- Provide supports that foster a data-driven culture within the school, such as structured time for teacher teams to meet and discuss data and targeted professional development to support data collection and use goals.
- Support the data analysis cycle. Implement an inquiry-based framework to include preparation, analysis, and action planning for data use with the support of school-wide data teams and PLCs.
- Engage stakeholders in the uses of the data system to report information.

CLASSROOM:

- Make data part of an ongoing cycle of instructional improvement.
- Teach students to examine their own data and set learning goals based on standards-based item analysis reports.
- Use data to foster and monitor continuous instructional improvement and individualized approaches based on research, evidence, and action plans.
- Understand and use a variety of data reports to diagnose learning and achievement roadblocks.

5 Facilitator's Checklist

Tasks	Target Date for Completion	Status (Not Started, In Progress, Completed)	Person Responsible/Notes
WORKSHOP PREPARATION			
1. Workshop facilitators have been selected: one IT leader and one instructional leader.			
2. A Professional Development Facilitation Team composed of district leaders, school leaders, and teachers has been selected for identifying and selecting technologies that enable the use of educational data.			
3. Professional development participants have read the *Direct Teach* content and the *Richmond County Public Schools Case Study*.			
4. Professional development participants have completed the *Checking for Understanding Worksheet*.			
WORKSHOP EXECUTION			
1. Professional development participants have viewed and discussed the *Fairfax County Public Schools Video Exemplar*.			
2. Professional development participants have completed the *Application Worksheet* and have shared their thoughts on the types of changes that they would recommend for their district's or school's current SIS and/or LMS solution.			
3. Professional development participants have discussed the *Fairfax County Public Schools Video Exemplar* and reflected on their vision for implementing SIS/LMS solutions. They have also reflected on how their vision would affect best practices for selecting and implementing technology solutions.			
4. Using the responses to their *Checking for Understanding Worksheet* (Question 3), the professional development participants have discussed what they believe to be the best practices for using educational data and technology tools to build a data-rich culture at the district, school, and classroom levels.			

Tasks	Target Date for Completion	Status (Not Started, In Progress, Completed)	Person Responsible/Notes
WORKSHOP EXECUTION, *continued*			
5. Professional development participants have completed the *Application Worksheet* exercise.			
6. Using the *Project Milestones and Timeline Guide* Project Initiation (diagram), the professional development participants have shared how they would define a goal(s) and an outcome(s) of an SIS and/or LMS selection process.			
7. Professional development participants have reviewed the instructional tools identified in the *Direct Teach* content. They have shared how they may be using the same or similar instructional tools to enable the use of educational data. They have also been asked to share additional tools that they may be using in their district, school, and/or classroom to enhance the use of data by stakeholders (such as students, teachers, and parents).			
8. Professional development participants have viewed the *Henry County Schools Video Exemplar* and discussed how Henry County Schools is using an assessment system to support the effective use of educational data by students and teachers.			
9. Participants have reflected on what they believe to be the most important functions of administrative tools that assist in informing instruction and/or closing achievement gaps.			

SD5

SECTION FIVE

Self-Directed Learning Materials

Enclosed are a ***Self-Directed Learner's Guide*** and a ***Self-Directed Learner's Checklist***. These supplemental tools provide customized instructions for individuals choosing to use the *Toolkit* in self-directed study. The materials are designed to be used in conjunction with the ***Direct Teach*** content, ***Checking for Understanding Worksheet***, and ***Application Worksheet*** included in this section.

5 Self-Directed Learner's Guide

Learning Objectives:

1. Develop an understanding of how technology tools and solutions support the building and sustaining of a data-rich culture.
2. Develop an understanding of the best practices for selecting and implementing technology solutions.
3. Identify technology tools/resources that enable the effective use of educational data at the district, school, and classroom levels, for example, SIS and LMS solutions, student/parent portals, student response systems, electronic whiteboards, bring your own technology (BYOT), and data dashboards.

Step One: Develop an understanding of how technology tools and solutions support the building and sustaining a data-rich culture.

1. Read *Direct Teach* content for Section Five.
2. Complete the *Checking for Understanding Worksheet*.
3. Read and reflect on the *Richmond County Public Schools Case Study*. Focus on the reasons the district expressed for changing its SIS system. Think about the statement below regarding "achieving efficiency improvements." Then think about the ideas that you recorded on your *Checking for Understanding Worksheet* regarding efficiency improvements in your district or school.

   > The replacement of the legacy SIS was based on a vision of achieving efficiency improvements. The 'first order' benefits of improving administrative and operational processes resulted in stakeholder engagement and buy-in needed to move the project forward. As operational improvements are achieved and a formalized program is developed on the use and analysis of data, other benefits of the SIS will be realized. Benefits such as the ability to use SIS/LMS data to improve instructional practice are typically 'second order' benefits, in that they arise from having these foundational elements in place, and after initial productivity improvements resulting from improved accuracy and integration of administrative and demographic information have been achieved.

4. Next, watch the *Fairfax County Public Schools Video Exemplar* and reflect on Ms. Maribeth Luftglass' views regarding SIS and LMS solutions as being a "one-stop shop for information."

5. Then complete the *Application Worksheet,* documenting your thoughts on the types of changes you would recommend for your district's or school's current SIS and/or LMS. If you don't have an SIS/LMS, prioritize the functions that you believe would be most important for building and sustaining a data-rich culture.

Step Two: Develop an understanding of the best practices for selecting and implementing technology solutions.

1. View the *Fairfax County Public Schools Video Exemplar* and reflect on your vision for and implementing your SIS/LMS solutions. Consider how your vision would affect the best practices for selecting and implementing technology solutions.
2. Review your responses in the *Checking for Understanding Worksheet* (specifically, Question 3), and consider what you believe to be the best practices for using educational data and technology tools to build a data-rich culture at the district, school, and classroom levels.
3. Complete the *Application Worksheet*.
4. Using the *Project Milestones and Timeline Guide* Project Initiation (diagram), consider how you would define a goal(s) and an outcome(s) of an SIS and/or LMS selection process. Refer to your response to Question 3 of the *Application Worksheet*.

Step Three: Identify technology tools/resources that enable the effective use of educational data at the district, school, and classroom levels, for example, SIS and LMS solutions, student/parent portals, student response systems, electronic whiteboards, bring your own technology (BYOD), and data dashboards.

1. Review the instructional tools identified in the *Direct Teach* content. Consider how you may be using the same or similar instructional tools to enable the use of educational data. Also reflect on additional tools you may be using in your district, school, and/or classroom to enhance the use of data by stakeholders (such as students, teachers, and parents).
2. View the *Henry County Schools Video Exemplar* and then reflect on how Henry County Schools is using an assessment system to support the effective use of educational data by students and teachers.
3. Reflect on what you believe to be the most important functions of administrative tools that assist in informing instruction and/or closing achievement gaps.

Recommended Answers to Questions Presented in the *Checking for Understanding Worksheet*

QUESTION 1:

List the five key elements for building a data-rich culture that support instructional decision-making.

ANSWER:

- Developing and maintaining a district-wide data system.
- Providing supports that foster a data-driven culture within the school.
- Establishing a clear vision for school-wide data use.
- Making data part of an ongoing cycle of instructional improvement.
- Teaching students to examine their own data and set learning goals.

QUESTION 2:

Describe how the *Fairfax County Public Schools Video Exemplar* demonstrates a district's vision for using technology tools to support student success.

ANSWER:

Ms. Maribeth Luftglass says it all when she refers to its system as a "one-stop shop for information." By making this statement, she is implying that the system is efficient, coherent, comprehensive, and user-friendly. The teachers and others in the video support this vision by commenting on the immediacy in which information is retrieved and the practical applications for which the information is being used. The system provides course and assessment information, resources for students, and the ability to engage students in "learning outside the classroom." As a result, "achievement gaps are closing."

QUESTION 3:

There are different roles and challenges at the district, school, and classroom levels for using data and technology tools and solutions to support the building of a data-rich culture. List two best practices for each level.

ANSWER *(Note: Participant would choose any two of the best practices.):*

DISTRICT:

- Plan for a district-wide data solution that is comprehensive and integrated, linking disparate forms of data for reporting and analysis to a range of audiences.
- Involve a variety of stakeholders in determining the key functions of the data solution.
- Base the system's requirements on user needs that support educational achievement.
- Identify the appropriate financial and human resources needed to develop safeguards that ensure data are timely, relevant, and useful to educators.
- Determine whether to build or buy the data solution. Either approach may have hidden costs, such as additional time to build a personalized system or the need to buy add-ons so that an off-the-shelf purchase will better meet the articulated functional requirements.
- Consider the technical requirements for the effective and efficient operation of your district-wide data solution.

SCHOOL:

- Establish a clear vision for school-wide data use. Set the tone for effective data use to define critical teaching and learning concepts.
- Provide supports that foster a data-driven culture within the school, such as structured time for teacher teams to meet and discuss data and targeted professional development to support data collection and use goals.
- Support the data analysis cycle. Implement an inquiry-based framework to include preparation, analysis, and action planning for data use with the support of school-wide data teams and PLCs.
- Engage stakeholders in the uses of the data system to report information.

CLASSROOM:

- Make data part of an ongoing cycle of instructional improvement.
- Teach students to examine their own data and set learning goals based on standards-based item analysis reports.
- Use data to foster and monitor continuous instructional improvement and individualized approaches based on research, evidence, and action plans.
- Understand and use a variety of data reports to diagnose learning and achievement roadblocks.

5 Self-Directed Learner's Checklist

Tasks	Target Date for Completion	Status (Not Started, In Progress, Completed)	Notes
1. I have read the *Direct Teach* content and the *Richmond County Public Schools Case Study*.			
2. I have completed the *Checking for Understanding Worksheet*.			
3. I have reviewed the *Fairfax County Public Schools Video Exemplar* and reflected on my district's or school's vision for implementing a SIS/LMS solution. I have also reflected on how my district or school's vision would impact best practices for selecting and implementing technology solutions.			
4. I have completed the *Application Worksheet* and reflected upon the types of changes that I would recommend for my district's or school's current SIS and/or LMS solution.			
5. I have reviewed Question 3 of the *Checking for Understanding Worksheet* and reflected on what I believe to be the best practices for using educational data and technology tools to build a data-rich culture at the district, school, and classroom levels.			

5 Self-Directed Learner's Checklist

Tasks	Target Date for Completion	Status (Not Started, In Progress, Completed)	Notes
6. Using the *Project Milestones and Timeline Guide* Project Initiation (diagram), I have reflected on how I would define a goal(s) and an outcome(s) of an SIS and/or LMS selection process.			
7. I have reviewed the instructional tools identified in the *Direct Teach* content. I have reflected on how I may be using the same or similar instructional tools to enable the use of educational data. I have also considered additional tools that I may be using in my district, school, and/or classroom to enhance the use of data by stakeholders (such as students, teachers, and parents).			
8. I have viewed the *Henry County Schools Video Exemplar* and considered how Henry County Schools is using an assessment system to support the effective use of educational data by students and teachers.			
9. I have reflected on what I believe to be the most important functions of administrative tools that assist in informing instruction and/or closing achievement gaps.			