Pioneering the Use of Learning Management Systems in K-12 Education

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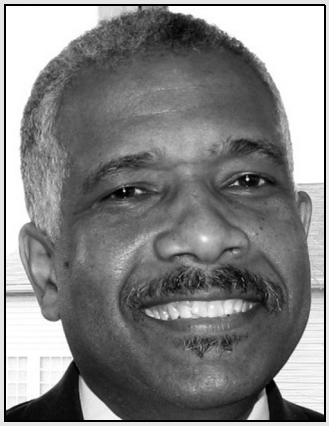
Introduction

In the Baltimore City Public School System (BCPSS), many of the teachers, administrators, staff, and students are using the district's learning management system (LMS) as a part of their daily practice. The Teacher Student Support System, or TS^3 as it is now called, unites the entire professional learning community across the district. TS^3, which is powered by Blackboard, loads a portal page that offers quick links to the Maryland State Department of Education (MSDE), the BCPSS intranet site, the BCPSS Technology Plan, the district's Media Center catalogue, Discovery Education/Unitedstreaming, the BCPSS Master Plan, and a plethora of network resources.



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Andres Alonso, the system's chief executive officer, uses TS^3 to communicate with the staff through weekly and monthly newsletters. The BCPSS school calendar and other circulars are also offered as links. There is a tab for and links to educational opportunities. Other information, such as grant opportunities, surveys, and pertinent announcements are also featured. The "See What's New" section keeps users abreast of recent developments in BCPSS. TS^3 "Users of the Week" are featured with a digital photo and a link to their personal testimony. Other BCPSS publications are featured, as well. The Parent Portal is the portion of TS^3 that provides access (for parents) to student courses, resources, and grades. The uses of TS^3 are limited only by the imagination of its developers.

The vision began with Bert Ross, the manager of the LMS, about 10 years ago. He received a federal Technology Innovation Challenge Grant and set out to, as he says, "create an electronic learning community so that teachers could break out of their walled classrooms and share resources across the district" (in Shein, 2008, para. 2). His efforts led him to Blackboard, a platform that offered the ease and functionality that Ross required. The proj-

ect was aptly named "the Teacher Support System," or TSS. It was piloted with a group of six middle school teachers. Its eventual success led to its growth into every grade level and into every school. Today, the district uses the LMS to post 27,00 classes online for 83,000 students and 6,200 teachers. More than 2,500 Baltimore city teachers currently use TS^3 at least twice a week. Teachers use TS^3 to post announcements and to disseminate assignments and resources. Some teachers use the Discussion Board feature and the Digital Drop Box. The assessment feature allows teachers to post tests and quizzes that are automatically graded and entered into the online grade book. The latest, upgraded version (Blackboard 8) even allows for blogs, podcasts, and wikis. Through TS^3, educators and students are offered the opportunity to receive professional development and training online. This service is delivered through a multitude of resources, including print media, audio, and video.

Michael A. Smith, a functional analyst and BCPSS TS^3/Blackboard guru, considers himself to be a Bert Ross disciple. Smith says that TS^3 is "mission critical" (in Shein, 2008, para. 7) to the district's operation. He adds, "It's a one-stop shop. Teachers can plan a lesson, see the curriculum, store and obtain resources, engage their students, be notified of upcoming professional development, get informed on happenings in the district—they can do it all packaged at this one location." As a former math teacher, Smith has seen the system's potential and benefits firsthand. He adds, "It was a way for me to share information without having to run to 20 different machines." He also found that this platform served to motivate his students. "In a typical algebra classroom" he says, "if you ask a question you may get one or two hands. By using the discussion board or chat feature associated with this application, you may get 100 hits within 15 minutes. It is student-to-student learning. You become the facilitator and not the person who has all of the knowledge. If you use this technology in the way students are accustomed to, you get the desired outcome."

Ross indicates that anecdotal accounts from teachers in his district indicate that the environment in the classrooms of teachers who use the LMS is superior to what is reported in nonparticipating classrooms. He states that, "The climate of the classroom is better, the attendance of the teachers and students is better, and the overall feeling of being engaged is better."

Technology is seen as playing a vital role in meeting the needs of the broad range of abilities, disabilities, cultural backgrounds, and ethnic populations represented in this urban school district. To this end, the District Information Technology Plan provides an action plan for the integration of technology into the curriculum, instruction, and the workplace (District Revised Information Technology Plan).

It is the vision of the district that the seamless integration of technology into all schools will lead to increased student achievement. State-of-the-art instructional technologies, combined with effective and appropriate teaching strategies that are supported by the appropriate levels of professional development, will work to ensure that students are engaged, motivated, and participating in dynamic and challenging learning activities. It is the systems intent to enable all students to become independent, competent, and creative thinkers, as well as effective communicators and problem solvers (District Revised Information Technology Plan).

During the summer of 2006, the district began a program designed to empower teachers and administrators to infuse existing and emerging technology into their practice. The stated purpose of the Technology Integration Analyst (TIA) program was to address the staff development needs of all schools and to promote more effective and widespread uses of technology throughout the district. This initiative,

under the direction of the Information Technology Division (ITD) required the recruitment and training of a cadre of 24 TIAs.

The TIA program goals are as stated:

1. To achieve academic achievement through the use of technology;
2. To insure that students in elementary and middle schools are technology literate by the end of Grade 8;
3. To insure that students in high school have increased literacy in the use of technologies in the world of work;
4. To encourage and model the effective integration of technology resources through teacher training; and
5. To ensure that all teachers are skilled in the integration of technology into curriculum in order to support academic achievement.

In order to access the Web-based resources of the district, educators must first login to the district's Web-based portal (TS^3), then navigate to the desired resource and employ it. Some of the training and services provided by the TIAs include:

1. Use of the TS^3, the district's Web-based portal for online information and educational resources;
2. Demonstrating building online courses, creating online assessments, and use of the online grade book, discussion boards, and the other electronic resources;
3. Learning computer basics;
4. Downloading streaming videos from Discovery Education/Unitedstreaming;
5. Supporting the use of Yearly Progress Pro, Open Court Assessment RS, and Princeton Review programs for data collection and instructional applications;
6. Assisting with educational Web sites such as National Geographic Online, Channel One, and Thinkport;
7. Helping with software applications such as Photo Story/Windows Movie Maker, podcasting (RSS), Riverdeep Learning Village, and Softchalk;
8. Hosting technology showcases for the district;
9. Providing assistance with the suite of Microsoft Office applications;
10. Selecting hardware and software to support classroom instruction;
11. Integrating technology into instruction
12. Discovering new uses for technology tools or designing projects that combine multiple technologies; and
13. Focusing on cooperative, project-based, problem based and interdisciplinary work with technology.

The infusion of educational technology is changing the face of education. Much of the change is driven by computer-based technology that facilitates and supports student achievement of essential learning outcomes, provides students with appropriate technology literacy skills for the twenty-first century, enhances opportunity, closes achievement gaps, promotes social equity and prosperity, and provides parents, community members, and staff with the tools and training necessary to support student achievement of essential learning outcomes. In the ways mentioned above, technology enhances content, processes, and relationships in a variety of ways in our learning environments. Modern classrooms are now equipped with computers, Internet access, video projectors, graphing calculators, wireless/Bluetooth technologies, interactive whiteboards, video visualizers (document cameras), and other software applications. Teachers and administrators must be empowered and trained to effectively utilize the instructional, as well as the data/information management applications, of computer-based technology.

Researchers suggest that integrating technology solutions into the classroom may have a major impact on students' academic achievement. Other studies show

that students whose teachers participate in professional development activities related to computers outperform students whose teachers did not (Zehr, 1997). Technology solutions will assist teachers in developing the "intellectual capital" of our system. Professional development activities will lead teachers and administrators to increase their productivity, enhance their ability to integrate technology, and establish communities of leaders and life-long learners (BCPSS, n.d.). In spite of the successes of the TIA program, the goals and directives of the Information Technology Plan, and the purport of the research findings, the TIA program was devolved (or discontinued) in the spring of 2008 due to budgetary constraints. However, the spirit, mission, and vision of the project lives on.

Blackboard, Inc. has recently released a national report that examines the data collected through the online Speak UP surveys, which were conducted in the fall of 2006. The report is titled, "Learning in the 21st Century: A Trends Update." The 2007 findings show that "over 41% of students believe that online classes will have the greatest positive impact on their learning" (p. 2). This reflected a growth of over 20% from the 2006 data findings. The 2007 data alludes to an "explosion" in familiarity with online learning. Responding high school students registered "an 80% increase in the familiarity with online learning" (p. 2). In addition to this, more than "1/3 of responding teachers say that they have explored opportunities for integrating online learning into their classroom. Twenty-six percent of teachers (in 2007) chose online learning as their first choice for training" (p. 2). From the Blackboard site, "over 88% of administrators say that the effective implementation of instructional technology is core to their mission and 84% believe that technology use does indeed enhance student achievement" (p. 4). The Blackboard corporation sees itself as empowering "K-12 schools and districts to focus on powered learning: connected, personalized teaching and learning that expands opportunities for all learners anytime, anywhere.… Each day over 12 million learners around the world use Blackboard solutions to support a 21st century educational experience that is engaging, individualized, and effective" (p. 4). The usage trends for online education and distance learning are clearly positive.

Every teacher, administrator, and student (in BCPSS) has a unique login with TS^3. When they log in, they are greeted by their name and welcomed to their customized home page. To the left are the Tools and Links. Alonso's newsletters, handbooks for training, and other procedures are featured under this section of the portal page. The organizations to which one belongs (or leads) are presented front and center. Courses in which one is enrolled or teaching are displayed as well. This front page is customizable and the display can be modified to suit the user's preferences. This design is customizable in terms of both color schemes and content.

The home page has seven tabs, located horizontally, across the top. The first tab, "TS^3" takes one to the home page. The second is for the "Content Collection." When this tab is clicked, users are able to access their online storage. Every educator is provided with 150 MB of online storage and every student is allocated 50 MB. The third tab is for Student Resources. When this page is opened the Digital Library and the Online Resources for students are made available. The digital library includes Pro Quest Learning Literature, Pro Quest, eLibrary science, eLibrary Curriculum Edition, Pro Quest Platinum, SIRS Knowledge Source and Discoverer, Black Studies Center, Historical newspapers, History Study Center, Culture Grams, and Science Resource Center. The online Resources for students include Encarta, Mathematics (Scott Foresman), BCPSS Library Catalog, Library of Congress, ChannelOne.com, Young Audiences Arts for Learning (Mary-

land), Our documents, refdesk.com, Discovery Education, The Beehive, College Board, and Tips and Tricks for Using the Internet. The page is also customizable.

The next tab is for Courses. Here, the course list for the user (with the associated course leaders) is displayed. To enter any of the courses, one need only click on the active link. A Course Catalog is also presented on another section of this page. The next tab, T/PQ (Teacher Principal Quality) provides for professional development and professional growth opportunities. The Professional Development calendar is here, as are other PowerPoint files for instruction and training. The Resources tab is next. It has all of the student resources plus Teacher Tools and Educational Links. The Teacher Tools are 4Teachers.org, Tools for Teachers, Rubistar, and Web Poster Wizard. The Educational Links section provides links to MERLOT, Chesapeake Bay and Mid-Atlantic from Space, the Maryland State Department of Education (MSDE), and Teacher Created Materials. The BCPSS LV tab provides access to the Riverdeep Learning Village Application. Unit Plans, lesson plans, Resources, and Standards are shared here, across the district. Next, the Videos tab gives access to links for professional development and other pertinent topics that are presented in video format. Opening the Assessment tab helps teachers to clarify and gain insight into testing procedures. Help for and information about the Maryland School Assessment (MSA), Stanford 10, and OARS are included here. Finally, the Registration/ Evaluation tab serves up links for evaluations and (workshop) registrations.

When a teacher clicks on a course that he or she is teaching, the course opens to the entry page. A basic shell of a course is provided by default. By entering the Control Panel (on the left), the teacher can build and modify his or her online course. Teachers are encouraged to create a course banner that welcomes students to their site. Also, teachers are trained to customize their online courses by choosing color schemes and creating the course content area buttons. The content areas may include Assignments, Homework, Resources, Assessments, Course Syllabus, and so on. Once the content areas are created, it is a simple matter to post or attach documents and other files to them. Announcements are easily made to the entire class. Students may be required to view a video, take an assessment, or to visit a Web site. By using TS^3's online grade book, teachers provide students and their parents with 24/7 access to the student's course documents and grades. TS^3 is a work in process and the educators of BCPSS are helping to pioneer the usage of course and learning management systems in K-12 education, today. The TS^3 site can be found at http://www.bcpss.org

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