Learning Management System (LMS): *The Missing Link and Great Enabler*

By John Phillipo and Sarah Krongard

A Learning Management System is the "great enabler" of many current and future education initiatives, such as personalized learning, learner-centered decision making, staff productivity and curriculum development in support of Common Core State Standards.

NEW technologies present unprecedented access to information, content, and data. Knowledge is more readily available than ever before, not only for students but also for parents and educators at all levels. After 30+ years of technology use in education, a comprehensive and systemic integration of a multi-dimensional Learning Management System (LMS) is greatly needed. Educators need a web-enabled relational database that links curriculum, instructional resources, assessment strategies, student data, and staff proficiencies as illustrated in Figure 1 *(see next page)*.

A LMS can serve as the "missing link" that will tie together contemporary education reforms with effective and creative uses of technology.

It is also the tool that will empower teachers to guide and manage student achievement more effectively by contextualizing the learning experience. As we have all known for many years, technology alone will not transform schools. Rather, technology must be comprehensively and systemically integrated in order to transform student learning.

About 20 years ago, our colleagues at the Center for Educational Leadership and Technology (CELT) set out to explore how non-educational organizations approached the mission critical use of technology. We asked executives from nearly every unique industry in our country two very simple questions. First, we asked: "Do you have limited technology dollars?" As you can imagine, everyone said "YES." The second question was: "How do you prioritize which technology initiatives to fund and support?" Once again, the answer was simple and straightforward: Determine what business you are in, and apply your limited technology resources to your core mission.

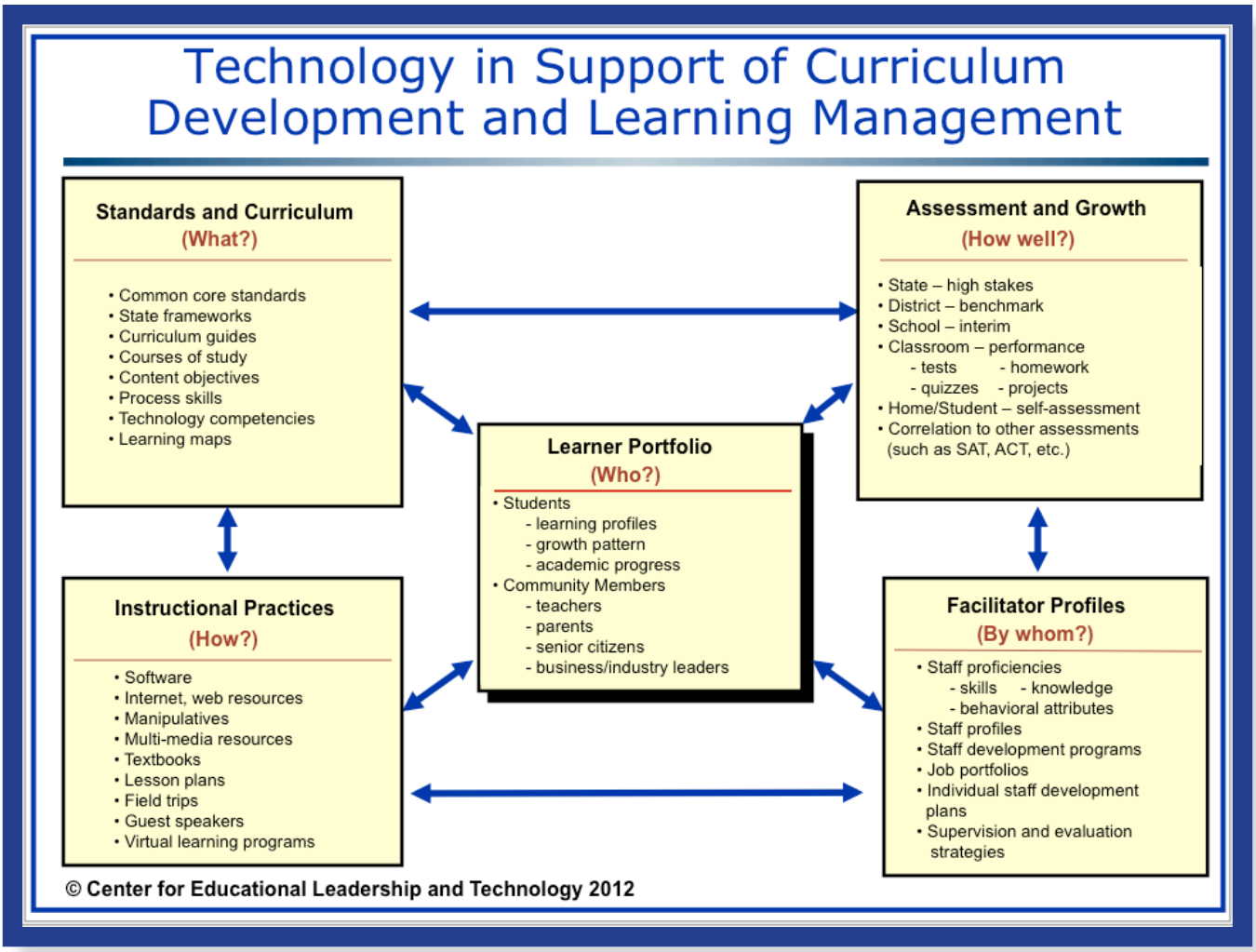

Figure 1 – LMS Conceptual Model

Educational organizations have not yet successfully and comprehensively capitalized upon the unique opportunities afforded by technology and utilized these new tools to transform teaching, learning, and management. Instead, we, as educators, have continuously used technology to tweak and make small improvements to our current, old, and outdated system of teaching and learning. For example, for many years, the aviation industry tried to improve the operations, efficiency, and output of the piston-driven engine. They tried using more cylinders, lengthening the propeller, changing the angles of the blades, increasing the number of blades, and altering the fuel/oxygen mixture with only marginal results. It was not until they conceived of a new approach, known as the jet propulsion/turbine engine, that they revolutionized the aviation industry. The same is true about our current system of education in America. Educators have extracted as much efficiency and productivity from our current model of education as possible. A Learning Management System is the "jet engine," a mission-critical technology application that will revolutionize education/learning, just as the Medical Literature Analysis and Retrieval System (MEDLAR) has the healthcare industry, Sabre, the database backbone for all reservation systems, has the travel industry, and Automated Teller Machine (ATM) kiosks have the banking industry.

Learning organizations need a Learning Management System that is accessible, easy-to-use, and supports their core mission by:

- generating accurate, reliable, and timely information about student performance to make the education process visible and personalize learning;
- increasing parental involvement by improving access to relevant and current information about the student's educational experience;
- empowering students with the resources necessary to assume an active role in and accept responsibility for their educational experiences;
- providing staff with the opportunities to work collaboratively and interdependently to bolster cross-curricular communication, enhance productivity, and improve accountability;
- linking staff development programs and supervision/evaluation activities with student learning and achievement in a comprehensive, nuanced manner;
- correlating standards to instructional programs and assessment strategies through virtual alignment tools;
- identifying gaps and misalignment in learning programs, such as adequacy of instructional resources, assessment items, and/or staff proficiencies, by examining programs;
- enabling community members of all ages to participate more fully in the learning process through the use of online tools.

In recent years, a variety of fragmented systems have been developed to support various aspects of instruction using student assessment data aligned to performance standards.

These systems are variably referred to as:

- Instructional Improvement Systems (IIS)
- Learning Management Systems (LMS)
- Curriculum Development Systems (CDS)
- Content Management Systems (CMS)
- Instructional Management Systems (IMS)
- Integrated Learning Systems (ILS)

…and many others — a veritable alphabet soup!

The challenge that educators face today is to determine where and how these systems converge and diverge and therefore which ones make sense for them to use. Although recent federal legislation (Race to the Top) refers to a LMS as an Instructional Improvement System (IIS), most educators agree "instruction" is not what we should manage through a technology solution. Rather, educators must focus more systemically on the main goal: LEARNING and the management thereof. Adaptive, exploratory, independent, experiential, and many other forms of effective learning do not require an "instructional" managed approach but rather a comprehensive LMS framework.

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Learners today are immersed in a variety of educational experiences, both formal and informal, that extend beyond the school day. These experiences are global, collaborative, networked, and dynamic and require facilitators to guide students in navigating an increasingly connected world. A LMS framework can empower educators, parents, and students by means of access to information that can alter and shape a student's personalized learning path. Will Richardson (2011) quoted American social writer and philosopher, Eric Hoffer, to further illuminate the importance of cultivating lifelong learners in a time of constant technological innovation "In times of change, learners inherit the earth; while the learned find themselves beautifully equipped to deal with a world that no longer exists." We, as educators, should aim to consistently use technology to inform, support, and propel this learner-centered approach to education.

Through a LMS, teachers, learning facilitators, instructional specialists, and aides are able to articulate learning goals, align content and assessments, and adhere to standards as they relate to selected curricula and instructional programs. Instructional resources, such as textbooks, podcasts, web-based apps, videos, e-books, manipulatives, and other instructional resources, can be correlated to specific learning activities with a description as to the use of such materials. The learning process is connected and contextual. Teachers can document, record, and electronically share classroom lessons that have been successful in achieving specific student outcomes with unique and diverse student needs. The correlation of measurable results to instructional resources shifts the emphasis away from a curriculum dictated and limited by the textbook to one encouraging inquiry and the development of lifelong learning skills.

A LMS provides all members of the learning community with a comprehensive and secure management system that allows the bidirectional flow of information on demand. Providing access to data and learning information from the home enhances communications between teachers and parents, thereby increasing parental involvement. The exchange of data in real time among the home, classroom, school, state, and federal government will also dramatically improve the reliability and validity of data. This widespread use of a LMS can make parents and community members aware of the value of the technology investments that their school board and administrators are making. It can encourage them to support future initiatives to implement technology in support of education reform, enhanced learning, and increased student achievement.

The LMS enables educators to create, access, tag, and manage banks of test items, as well as catalog and use other evaluation methodologies (e.g., holistic scoring, teacher observable assessment, portfolio/authentic assessment, etc.) to assess and manage desired student competencies. It provides comprehensive profiles of learner performance and growth; and empowers leaders with the resources necessary to manage their most important and expensive resource—staff. The alignment of staff proficiencies (skills, knowledge, and behavioral attributes) with learner needs and school improvement plans, correlated with individualized staff development programs are essential to high-performing and results-oriented learning organizations.

Without a doubt, a Learning Management System must be the electronic/bionic heart of any learner-centered decision support system as depicted in ***Figure 2***. A LMS is the "jet engine" that should drive learning.

Based on feedback from well over 200 focus groups conducted by CELT throughout the country and across all constituent groups (students, teachers, parents, administrators, school board members, and community leaders), the five interactive and interconnected boxes shown in ***Figures 1 and 2*** must be part of a comprehensive Learning Management System. As educators, we must refrain from buying what vendors want to sell and rather define exactly what we need and procure accordingly. In order to maximize the benefit from the implementation of a LMS, all five components illustrated in the conceptual model in ***Figure 1*** must be properly procured and in place. However, implementing a LMS may also require significant "process" improvements and IT infrastructure upgrades.

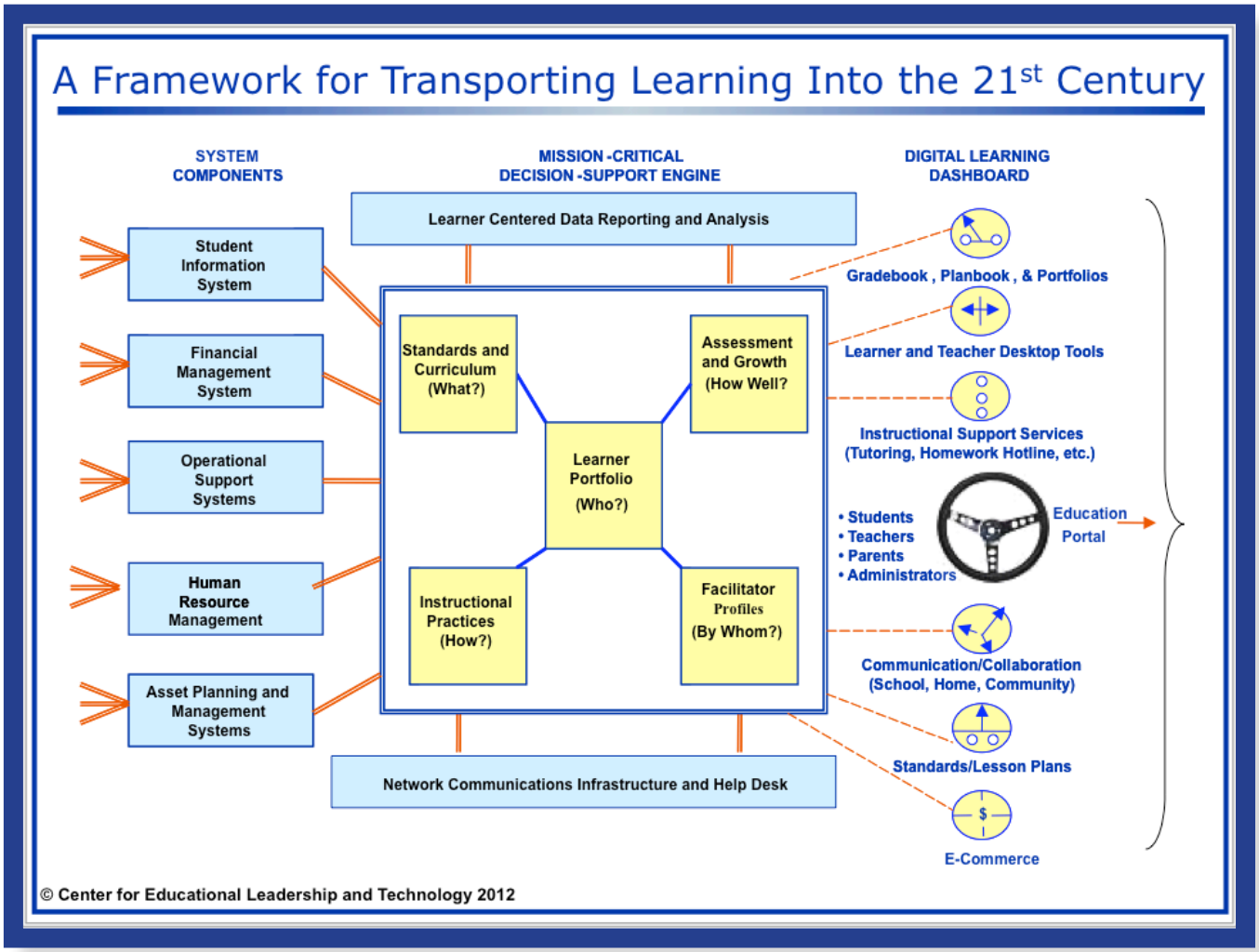

Figure 2 – LMS Integration Strategy

Without a doubt, a Learning Management System must be the electronic/bionic heart of any learner-centered decision support system

In summary, there are hundreds of competing education reforms and thousands of different technology solutions available to us in education. As is the case with service providers in both healthcare and education, these competing options are based on limited fiscal resources, such as: *(1) longer amount of time with patients/students; (2) fewer patients/students to support, guide, and advise; (3) more accurate, easy-to-access, real-time, and mission-critical information about patients/students; and, (4) greater standardization about diagnostic and prescriptive information*. However, when asked if you could only select one, educators and healthcare providers consistently chose option 3!

Lastly, most data systems in the U.S. are focused on pulling data from the home to the classroom, to the school, to the school district, and then onto the federal government. CELT's extensive field work in this area shows that for every $20 we spend pulling and reporting data, educators spend less than $1 providing meaningful data to students, teachers, and parents. A comprehensive and systemic LMS will greatly reverse this trend. Interestingly, for the past 25 to 30 years, learning organizations have spent millions of dollars buying business management systems. Now, we need to make a similar, if not an even greater, investment in a Learning Management System. A Learning Management System, when properly defined, properly procured, and successfully implemented, will enable us to use meaningful, real-time data as a flashlight rather than as a hammer, an approach that has been advocated by the Data Quality Campaign and others for many years. CELT is currently a supporting organization of the Shared Learning Collaborative (SLC), an alliance of states, foundations, educators, content providers, developers, and vendors who are committed to improving and personalizing education through technology in support of the Common Core State Standards. The SLC is building an integrated and scalable technology solution that will serve as an "ecosystem" for creating and extending the usefulness of a Learning Management System. The SLC will help states, learning organizations, and educators to best leverage this infrastructure in support of student learning.

Within his book, *Education Nation*, Milton Chen shares an anecdote about an interaction between an educator from India and an educator from the United States. The Indian educator asks, "In America, you test your students a lot, don't you?" The America educator states that indeed, the United States has a national policy that requires testing of all students in certain grades. The Indian educator replies, "Here, when we want an elephant to grow, we feed the elephant. We don't weigh the elephant." (Chen, 2010). A Learning Management System can contextualize the educational experience and provide educators with a vehicle to achieve this necessary balance amongst teaching, learning, and growth. Now is the time for real and meaningful change in education through this mission-critical technology application.

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References:

Chen, M. (2010). Education Nation: Six Leading Edges of Innovation in Our Schools. San Francisco: Jossey Bass.

Goldberg, M., Jay, M., and Wujcik, A. (2011). State of the K12 Market 2010: Educational Technologies. Shelton, CT: Market Data Retrieval.

Richardson, W. (2011). Learning in a Networked World: For Our Students and For Ourselves. Presented at the Northeast Affiliates ASCD Conference. Boston, MA.

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***For additional information on Learning Management Systems or specific case studies regarding the ways in which this conceptual framework supports leadership and learning, please contact: the Center for Educational Leadership and Technology at* www.celtcorp.com *or John Phillipo at* jphillipo@celtcorp.com *or Sarah Krongard at* skrongard@celtcorp.com.**