The Power of Technology to Enhance Learning

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The United States Department of Education has recently issued the *National Education Technology Plan 2010: Learning Powered by Technology*, which is available online at http://www. ed.gov/technology/netp-2010.

This document joins the many other standards documents such as AASL, ISTE, P21, and the Common Core Standards, which teacher-librarians should know and understand if they are to be leaders in teaching and learning.

Every teacher-librarian should read the entire document carefully, but we decided certain critical excerpts from that plan would guide teacher-librarians toward important ideas put forward that would enhance the role of the learning commons as a vital force in technology.

The first major quote provides an excellent technology mission for the learning commons program that could be used in policies, presentations, and as a major goal:

Learning: Engage and Empower

The model of learning described in this plan calls for engaging and empowering learning experiences for all learners. The model asks that we focus what and how we teach to match what people need to know, how they learn, where and when they will learn, and who needs to learn. It brings state-of-the-art technology into learning to enable, motivate, and inspire all students, regardless of background, languages, or disabilities, to achieve. It leverages the power of technology to provide personalized learning and to enable continuous and lifelong learning. (p. 8)

At the heart of the learning commons, whether in physical or virtual space, is a parade of super learning experiences that exceed normal standards expectations. Note the constructivist nature of these recommended learning experiences:

The challenge for our education system is to leverage the learning sciences and modern technology to create engaging, relevant, and personalized learning experiences for all learners that mirror students' daily lives and the reality of their futures. In contrast to traditional classroom instruction, this requires that we put students at the center and empower them to take control of their own learning by providing flexibility on several dimensions. (p. 8)

As a measure of the effectiveness of such technology interventions, the teacher-librarian and the classroom teacher need to build in both formative and summative measures of content learning, 21st century skills, and the power of technology tools to boost that learning. The Plan states it this way:

Assessment: Measure What Matters

The model of learning requires new and better ways to measure what matters, diagnose strengths and weaknesses in the course of learning when there is still time to improve student performance, and involve multiple stakeholders in the process of designing, conducting, and using assessment. In all these activities, technology-based assessments can provide data to drive decisions on the basis of what is best for each and every student and that, in aggregate, will lead to continuous improvement across our entire education system. (p. 9)

Of major interest to teacher-librarians is the emphasis of the plan on collaborative construction and assessment of learning experiences. Rarely is there a stronger statement in educational literature. This plan recognizes that an isolated teacher in front of a classroom needs other expert partners in super learning experiences. In fact, we are actually named as one of these partners:

Teaching: Prepare and Connect

Just as leveraging technology can help us improve learning and assessment, the model of learning calls for using technology to help build the capacity of educators by enabling a shift to a model of connected teaching. In such a teaching model, teams of connected educators replace solo practitioners, classrooms are fully connected to provide educators with 24/7 access to data and analytic tools, and educators have access to resources that help them act on the insights the data provide. (p. 10)

In connected teaching, teaching is a team activity. Individual educators build online learning communities consisting of their students and their students' peers; fellow educators in their schools, libraries, and after-school programs; professional experts in various disciplines around the world; members of community organizations that serve students in the hours they are not in school; and parents who desire greater participation in their children's education. (p. 10)

Then, the plan turns to the issue of access. We are impressed that it recognizes an open system of instructional computing, which we demand for a learning commons environment. And, we are interested that it emphasizes multiple devices and 24/7 access (that means both in and out of school).

Infrastructure: Access and Enable

An essential component of the learning model is a comprehensive infrastructure for learning that provides every student, educator, and level of our education system with the resources they need when and where they are needed. The underlying principle is that infrastructure includes people, processes, learning resources, policies, and sustainable models for continuous improvement in addition to broadband connectivity, servers, software, management systems, and administration tools. Building this infrastructure is a far-reaching project that will demand concerted and coordinated effort. (p. 11)

In another access statement, we are again pleased that libraries are recognized as essential in access. Thus, we argue for 802.11n wireless systems in the learning commons that will handle a major load of students using both school and their own personal devices to access what we provide:

Although we have adopted technology in many aspects of education today, a comprehensive infrastructure for learning is necessary to move us beyond the traditional model of educators and students in classrooms to a learning model that brings together teaching teams and students in classrooms, labs, libraries, museums, workplaces, and homes—anywhere in the world where people have access devices and an adequate Internet connection. (p. 11)

Note the emphasis placed on online learning communities that we have labeled "knowledge building centers" where a learning experience becomes a giant conversation among the students, classroom teachers, teacher-librarians, teacher technologists, reading specialists, other specialists, experts, administrators, and parents:

Always-on Learning

An infrastructure for learning is always on, available to students, educators, and administrators regardless of their location or the time of day. It sup-

ports not just access to information, but access to people and participation in online learning communities. It offers a platform on which developers can build and tailor applications. (p. 11)

Note that in these super learning experiences, the plan is obviously constructivist and supports the idea that teacher-librarians have had for years about active inquiry being a very collaborative experience:

An infrastructure for learning unleashes new ways of capturing and sharing knowledge based on multimedia that integrate text, still and moving images, audio, and applications that run on a variety of devices. It enables seamless integration of in- and out-of-school learning. It frees learning from a rigid information transfer model (from book or educator to students) and enables a much more motivating intertwinement of learning about, learning to do, and learning to be. (p. 11)

The concept of equity and real differentiation is emphasized in the plan. Our stance as teacher-librarians is that the learning commons with its staff of professionals is the best way to ensure this equity:

In the United States, education is primarily a state and local responsibility. State and local public education institutions must ensure equitable access to learning experiences for all students and especially students in underserved populations—low-income and minority students, students with disabilities, English language learners, students in rural and frontier schools, and others. States and districts need to build capacity for transformation. The Department of Education has a role in identifying effective strategies and implementation practices; encouraging, promoting, and actively supporting innovation in states and districts; and nurturing collaborations that help states and districts leverage resources so the best ideas can be scaled up. (p. 13)

As a final part of the plan, major recommendations are given with a list of action items that could be taken to implement the entire plan. We reprint the major five here:

1.0 Learning: Engage and Empower

All learners will have engaging and empowering learning experiences both in and out of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society. (p. 14)

2.0 Assessment: Measure What Matters

Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement. (p. 15)

3.0 Teaching: Prepare and Connect

Professional educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for all learners. (p. 16)

4.0 Infrastructure: Access and Enable

All students and educators will have access to a comprehensive infrastructure for learning when and where they need it. (p. 17)

5.0 Productivity: Redesign and Transform

Our education system at all levels will redesign processes and structures to take advantage of the power of technology to improve learning outcomes while making more efficient use of time, money, and staff. (p. 18)

In summary, we would not be more pleased for teacher-librarians and the ideas and principles of an effective learning commons, that the National Education Technolgy Plan 2010 provides. Combined with the other major national documents, there is ample support for developing and implementing a strong learning commons where the entire focus is on super collaborative teaching and learning experiences. Now, can we use this plan to further our agenda? But, it's not just OUR agenda: it's all about kids and learning; all about preparing them to compete globally; all about preparing them for successful college and career experiences.