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## Collaborative Planning and Design for Technology Integration

Technology initiatives are continually in the headlines as schools and districts purchase iPads, Chromebooks, laptops, Learning Management Systems and other technologies. Without a good focus however, such expensive programs could have unintended consequences: stress among colleagues with varying agendas on how to spend the funds, purchasing of apps and hardware without a strategic vision for professional development, technology as distraction for students, and considerable energy spent on matters that might undermine rather than enhance what students can do or understand. Furthermore, as parents show increasing concern with the mounting screen time their children are experiencing, uses of technology have to be rationalized and grounded in the curriculum standards. With these obstacles in mind, school leaders should determine to develop a systematic approach to technology infusion that brings together the expertise of the community to improve the learning experience for the students. We argue that curriculum and pedagogy, rather than the technology, should drive the technology integration process.

To ensure that the use of technology supports and enhances student learning, a collaborative approach to curriculum review and design that draws upon the distributive expertise of team members and their respective **technology**, **pedagogy** and **content knowledge** (TPACK) is an effective approach. TPACK represents the interconnected knowledge in these three domains that teachers must draw upon to integrate technology effectively. While TPACK is often conceptualized as the knowledge a single individual holds, it may not be reasonable to assume that all classroom teachers have extensive knowledge and experience in all three areas. This is particularly true in terms of the ever-expanding technology tools and resources increasingly available to them. In collaboratively designing and implementing a technology initiative, educators can  leverage the TPACK construct for technology integration that focuses on identifying optimal fit between these three domains. The goal of technology initiatives and integration programs from the start should be to enhance student learning in the form of higher-order thinking, deep learning, collaboration and student engagement.

While the "T" in TPACK may stand out as the goal or driver of the integration process, it should be noted that the technology also brings challenges along with new opportunities for schools, teachers and students. The integration of technology inherently changes the teaching and learning experience. As educational leaders we should consider the affordances and constraints of technology efforts as students encounter the different literacies encompassed in technology-enhanced learning experiences.

Fortunately, schools are filled with skilled and knowledgeable experts in curriculum,

pedagogy and technology. Classroom teachers and instructional technologists quickly come to mind. In many schools, librarians also play a leading role in helping students to develop their visual, media, design, information and technology **literacies**. In some schools the instructional technologists partner with librarians and classroom teachers to form a collaborative, team-based approach to developing standards, learning outcomes and curriculum that integrates technology among multiple literacies to enhance student learning. The specialists enjoy the advantage of understanding the needs of all students to offer strategic, articulate and focused skill development.

So how does a school encourage, support and systematize this type of collaborative, team-based planning? One approach is to build a "curriculum collaboration team" of teachers, learning specialists and administrators who draw on their various areas of expertise to create effective, curriculum-based technology-infused initiatives and curriculum. Who are the members of a curriculum collaboration team? The answer depends on the individual school but here are some examples of curriculum, pedagogy and technology experts that many schools can empower in this process:

- Curriculum Director/Department Chair/Team Leader- provides curriculum expertise and guidance for the big picture of the school/division scope and sequence
- Principal or Assistant Principal- provides insight on the school's goals, instructional leadership and validation for the importance of the work
- Librarian/Media Specialist- provides expertise in both resources and tools as well as strategies to support student learning for multi-literacies
- Instructional Technologist- provides experience in understanding the technology options, as well as their educational affordances and constraints
- Learning Support Teachers (e.g., ESL, reading recovery, gifted, special education- provides insight on ways to support differentiation for specific student populations

The Curriculum Collaboration Team partners with the **classroom teachers** in structured and ongoing curriculum meetings. They all bring their various degrees of curriculum, pedagogy (including understanding the school context and student learning) and technology knowledge to the meetings. One key element of this process is that the classroom teachers are in charge and manage the meetings. In terms of process, it is helpful to divide the units of study up with two teachers assigned to each unit depending on the size of the school. This sharing of curriculum review responsibilities adds to the efficiency of the process while also building trust among grade level, team or department members. One teacher provides the leadership to facilitate the meeting while another takes on the role of scribe updating the unit plan in a collaborative word processor (e.g., Google Drive) or curriculum mapping system for all to see on the projector screen. These two roles guide the meeting and empower the teachers to fully take ownership of the curriculum. The administrators and learning specialists bring their areas of expertise to the table in an atmosphere of shared creativity and responsibility.

As the meeting progresses and revisions are made to the unit plan, any possible

deletion of actions or materials is changed to red text. Any additions to the unit plan are added in green text. Learning specialists who cannot attend the meeting can post ideas ahead of time and/or respond after the meeting via the mapping tool.

A "to do" list is created in one section of the unit plan with specific assignments for each team member to work on after the meeting. This may include issues such as identifying specific technology resources, developing an assessment rubric, or exploring features of a suggested technology tool or resource. The scribe then shares this document with all members of the Curriculum Collaboration Team. The lead teacher oversees the follow through of these tasks as each participant is responsible for going back to the unit plan to add "Completed" by his/her tasks once accomplished. It is this highly structured procedure that holds everyone accountable while moving the discussion and creativity of the meeting into action steps. The teachers meet with their grade level, team or department teaching partners to finalize the unit plan.

Team members participate in all aspects of the meeting, not just in their area of responsibility. As everyone becomes more comfortable sharing ideas and strategies, they learn from one another, thus increasing their own level of expertise in each domain of the TPACK construct. The professional growth continues when the curriculum creation process includes differentiation for the content, process and products. This is where the learning specialists really add value to the process as they contribute curriculum strategies for teachers to draw from as they work to meet the learning needs of all of their students.

The implementation stage of the curriculum collaboration process gives the classroom teachers an opportunity to co-teach with the librarian or instructional technologist, gaining confidence not only in teaching the lessons on his/her own but also to expand her own technology knowledge to support her future curriculum planning. The same is true for the librarian and instructional technologist who gain deeper understanding of content for units that they help teach to the point that they can begin to provide input on content and pedagogy for upcoming units of study in the collaborative meetings. This distributive approach to shared expertise can greatly enhance a school's efforts to integrate technology into the classroom to enhance student learning.

Educators at all levels recognize the opportunities and challenges inherent in integrating technology in classroom teaching. It can seem quite daunting to envision successfully planning a school-wide 1:1 initiative, or even pulling off a single lesson using Skype for an inexperienced teacher. The authors recommend that for the greatest success, teamed teachers new to using this approach focus upon no more than one unit per semester their first year of implementation and then build upon that success. With this type of collaborative approach to planning and TPACK development, all members of the school community can tackle these challenges and capitalize on these opportunities together.

Reference: All Aboard **Learning and Leading in Technology** December/January 2008-2009