

Making Connections:

Integrating Computer Applications With the Academic Core



BY CHRISTI HARTER

In order to improve the quality of technology instruction, the Career and Technical Education (CTE) Business Department in the Spokane Public School district has aligned its Computer Applications (CA) course to the district's ninth-grade Springboard (Language Arts) curriculum, Algebra I curriculum, and the Culminating Project (senior project) requirement. These efforts were intended to provide more specific curriculum support to core content areas which would, in turn, support students in the pursuit of meeting standards on local and state assessments. This cross-curriculum integration has provided multiple learning opportunities for us:

- Our business teachers have become more aware of how data-driven decision-making affects the curriculum development process.
- Teachers have also gained a better understanding of the CTE and core content standards.
- Teachers have implemented best-practice instructional strategies based on standards.
- We have learned how new courses need to be implemented to fit with the master schedule.

The Curriculum Process

The Why: Data-driven Decision-making

Various research has identified that technology integration can enhance both what and how children learn in the classroom via active engagement, participation in groups, frequent interaction and feedback, and connections to real-world contexts (Roschelle, Pea, Hoadley, Gordin, and Means, (2000). It can also serve as a resource to help develop higher-order thinking, creativity and research skills (Reeves, 1998; Ringstaff and Kelley, 2002). In order to prepare students to be career- and college-ready, technology integration in core content areas is vital. The redesign of Computer Applications to integrate with other curriculum allows this CTE course to play an active role in assisting with our district's graduation rate. The integration helps students meet standards on assessments at the district and state levels, hone their technology skills, be more engaged during instruction, and experience core-content appreciation and academic gains through the integration of technology across disciplines.

The standards for Computer Applications in Washington are based on: File Management, Digital Citizenship, Living Online, Communicating Information Digitally, Emerging Technology, Web Design, Digital Health and Wellness, and Career Exploration. These CA standards directly align to support the standards for Springboard 9, Algebra I, and the Culminating Project. Blending the learning environment provides relevant applications and extended learning experiences for our students, curriculum supports for core content teachers, and cross-curricular connections for our CTE teachers.

The Who, What, When, and Money

Prior to beginning any change in curriculum, you must gain approval from district- and building-level administrators, using data to help guide the conversation. Once approval is established, district adminis-

trators can provide support to create connections between curriculum coordinators (*i.e.*, CTE and language art coordinators), and advise building administrators about the work being conducted to support their teachers and students. Building administrators and counselors are vital to the success of this cross-curriculum move as they develop the master schedule, support teachers and students in this change process, and evaluate teachers based on the new curriculum. Be sure to communicate with your middle school principals and counselors in order to get the courses offered on the registration forms for your eighth-grade students.

Our approach to curriculum development involves the advice of DuFour and Eaker (1998) to include teachers in this process. Based on the importance of integrating standards from both curricula areas, expert teachers from both content areas need to be involved from the very beginning. Due to the multiple hours of time associated with any curriculum development process, it is imperative to involve teachers who are highly interested and committed to the work. As Collins (2001) advises, get the right people on the bus. This group effort ensures that the curriculum developed is the curriculum taught.

Therefore, I, as the curriculum coordinator, and chosen content teachers have an ultimate goal of creating a curriculum guide and a program guide based on the standards associated with the two courses. Our curriculum guide offers a framework for the course and defines the following: course standards and complementary standards, classroom evidence, assessments, resources and an instructional timeframe for each unit. Our program guide provides the same information as the curriculum guide along with lessons associated for each unit.

During the initial meeting, lead with data to define the rationale for, and the goals of, the new course. Our teachers were provided data reflecting the decline

in high school sections of CA within the district over the past four years, as well as the increase in CA sections now being offered at middle school as of the 2009-2010 school year. Further data reflected the number of students who took an elective course due to their previously not passing a core content course—such as Algebra I.

During meetings, curriculum materials (*i.e.*, course standards, curriculum guide and program guide examples, associated textbooks) need to be readily available as resources. In order to provide easy access to materials, a folder was created on a shared drive for which teachers could store, share and obtain materials.

As a rough estimate, approximately 40 hours of curriculum development time will be needed to establish a new, cross-content curriculum. This is based on both content areas already having developed curriculum aligned to standards. Another aspect to consider is that when teachers were asked to meet outside of their contract hours, we paid them for their time. We also held curriculum meetings during the school day and therefore had to pay for subs.

Best Practice Instructional Strategies Training and Technology Integration

There are a variety of best-practice instructional strategies that we use to support new courses. As part of the curriculum development process, all educational materials are created in an electronic format, typically in Microsoft Word. The teachers who developed the curriculum pilot the class and update the curriculum materials as needed. We use these expert teachers to then offer curriculum trainings to all other teachers. During trainings, the instructor can then deliver the curriculum electronically and, if need be, provide correlating software training for the other teachers.

According to a meta-analysis conducted by the U.S. Department of Education (Means, Toyama, Murphy, Bakia,

and Jones, 2009), instruction combining online and face-to-face elements had a larger advantage compared to purely face-to-face instruction or instruction that is purely online. Therefore, we upload all curriculum materials in a folder on the shared drive and provide associated

teachers access to this folder. Furthermore, we also aim to develop a Blackboard template for each course in which curriculum is uploaded and formatted to be used as an online instructional delivery tool. Each teacher can then obtain his/her own Blackboard template for use as

a blended-learning environment. Please note that Blackboard training may be necessary for some teachers.

Ongoing Professional Development

To continue to support curriculum updates, program development and teacher growth, collaboration opportunities are offered on a regular basis. If the course is being offered in more than one of our six high schools, we set up teacher collaboration meetings on a regular basis (monthly, quarterly, yearly—depending on the course) to discuss past, present and future curriculum, student achievement results, and offer any training necessary to ensure our teachers feel confident with the curriculum.

Data Collection Results

During our collaboration meetings, curriculum lesson and unit assessment discussions are held to determine how effective our cross-curriculum alignment has been in terms of student academic gains. In addition, teachers have conducted student surveys to gather qualitative data on student perception of the course(s). These survey results show students favor learning a core content material through the support of technology, and that they feel they are doing better in class by being able to learn more about and/or complete their core content assignments in another class. Quantitative data has been gathered through our unit assessments as well as our end-of-year grades. In our CA-Springboard 9 class, students participating in this integrated class compared to students who did not, earned a 0.64 higher GPA.

Recognized for Excellence

Three of our CTE teachers, Marie Tamura and Joey Morton at North Central High School, and Cheryl Gould at Ferris High School, have been our teacher leaders in developing curriculum and teaching trainings. Due to their innovative work, they were asked by our state

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CTE administrators to present their work at the 2010 Washington Association for Career and Technical Education (ACTE) Fall conference. In addition, these three were asked to present at the 2011 Western Business Education Association Regional Conference. These dedicated teachers have also been accepted to present at this year's ACTE Annual Convention in November! **I**

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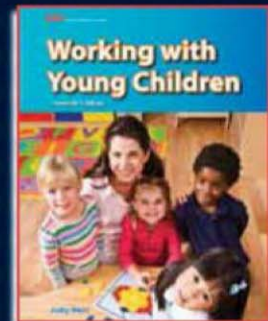
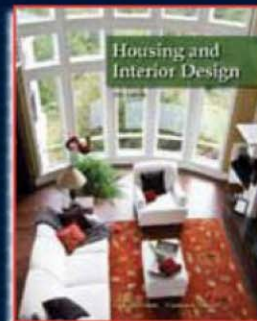
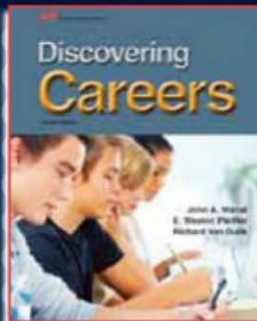
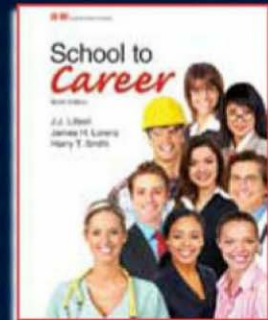
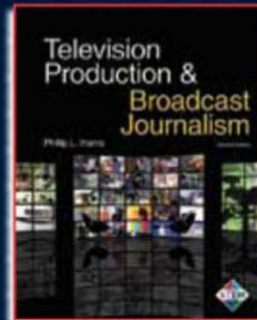
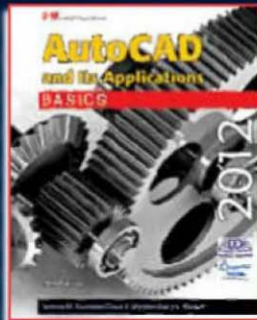
Christi Harter, Ph.D.,

was career and technical education coordinator for Spokane Public Schools in Washington. She can be contacted at charter@smcoe.k12.ca.us.

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