Common Core State Standards & Career and Technical Education: Bridging the
Divide between College and Career Readiness: A Summary and Reaction
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Summary

The article "Common Core State Standards & Career and Technical Education: Bridging the Divide between College and Career Readiness" explains the importance and relevance of implementation of the Common Core State Standards (CCSS) within Career and Technical Education (CTE). A discussion of the history and rationale for CTE academic integration combined with background on the CCSS provide a context for the argument that CCSS involvement presents a great opportunity for CTE.   By gathering and expressing perspectives of CTE directors and state CCSS coordinators, eight strategies for improving integration are explored. The article presents a call to action across the CTE spectrum.

Reaction:

Interestingly, five of the eight strategies overtly recommend building of relationships, understandings and connections between the various constituencies which coexist within the grand scheme of common core integration:

- Developing a Common Understanding of College and Career Readiness.
- Forming Cross-Disciplinary Teams for CCSS Planning and Implementation
- Ramping up Communications and Information Sharing
- Fostering CTE and Academic Teacher Collaboration
- Involving Postsecondary CTE in CCSS Implementation.

 Within these strategies, the roles of government agencies, business partners, administrators, teacher leaders/representatives, classroom teachers and others are explored and validated. Instead of being about lists of standards or curriculum documents, integration is about activities of groups.

Two of the strategies target instruction: Creating or Updating Curricular and Instructional Resources and Enhancing Literacy and Math Strategies within CTE Instruction. These strategies also suggest involving constituencies; the cross-walking of CTE and CCSS standards requires

identifying responsible staff who might be drawn from a variety of levels in CTE and or academia. Preparing teachers to employ improved instructional strategies suggests strengthening of teacher training. The issue of teacher training is important here, as a systemic approach to CCSS integration depends on centralization of efforts at the state level. Starting with Perkins II, "a shift in funding from state-level leadership activities to local use, CTE teacher education programs were particularly hard hit in most states." (Camp and Heath-Camp 2007 p. 18) If training systems are challenged in regard to delivering training in basic pedagogy, can we expect them to be prepared to address the challenging issues involved with CCSS integration?

The final strategy, establishing expectations and monitoring systems, may be seen as a conceptual umbrella under which collaborative efforts are executed and evaluated. The article does not address the content of the CCSS, nor does it detail information about CTE curriculum. Essentially we have a complex set of standards, being presented to a vast and diverse set of players who need to coordinate efforts to realize the benefits. With clear expectations and monitoring, a connected and vital system can emerge.

Integration of academics within CTE curricula is not a new phenomenon, and although efforts can be seen as "sporadic" (Hans, Suddreth, National Association of State Directors of Career Technical Education Consortium., & Association for Career and Technical Education, 2012, p. 4) there are fine examples of the capacity of CTE to both deliver academic curricula and to align technical curriculum to academic standards. One example can be found in the Math in CTE Project which is particularly strong in its analysis of college and career expectations. It focuses on clearly defined curricula and instructional strategies. Although it uses a variety of measurement instruments not associated with CCSS such as Accuplacer, TerraNova and WorkKeys. (Stone III , Alfeld, Pearson, Lewis, & Jensen, S., 2007) It would seem that cross-walking this curricula to CCSS would be possible and helpful. .

Possibly, some of the more interesting scenarios that recommend academic integration flow from the CTE practitioner level upwards. For example, in a discussion of teaching about engine compression, David MacQuarrie presents an example requiring students to employ a more complex mathematical formula than is suggested in his textbooks. Instead of looking only at the volume of the cylinder and chamber to derive compression ratio, he describes that the actual ratio is dependent on the displacement volume within the system. This requires more complex algebraic calculation and a deeper understanding of the geometry of the system's parts. MacQuarrie draws connection to academic standards in an important and meaningful way; the exercise strengthens students' grasp of a particularly challenging Michigan's sixth grade science standard. (MacQuarrie, 2008) This is a strong example of meaningful integration and cross-walking to standards. The activity would seem to have equally strong and compelling ties to the high school common core standards: "CCSS.Math. Content.HSG-MG.A.1 - Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder)" and "CCSS.Math.Content.HSA-CED.A.3 -Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010) The common core ties may be more grade level appropriate and represent opportunity for significant cross-pollination of ideas between multiple secondary education areas including CTE, math, and science. As we can identify a lower grade level connection, scaffolding of content can be considered.

The problem in bringing this scenario to where it can inform deeper and richer curriculum may be the lack of connectedness between the players. The most obvious of these gaps is in the absence of academic and CTE teacher collaboration. How could the richness of this example be shared without contact between math & CTE teachers? What lead MacQuarrie to coordinate with misddle school science instead of high school math? However, when we consider the scenario from

more systemic level, district wide and statewide coordination of planning and implementation, and stronger communication are equally involved. Who is in a position to identify and communicate CTE related exemplars such as this one? How can the richness of nor only this but other CTE subject areas be considered?   The example also speaks to common understandings of college and career readiness and postsecondary connection. Who among employers and academics will recognize value in a student's ability to distinguish through geometric and algebraic calculation between basic object measurements and the functioning of more exacting measurements as they occur in a real world situation? Is the math and physics of engine compression ratios worthy of study by all students or some students? Scenarios such as this may be gems that fall through the cracks without strategic collaboration which could address many of these important questions.

When we look at the above examples we see a complex and challenging set of circumstances; these both are within discipline of math which is somewhat clear in its delineation and articulation. The who, what and how issues surrounding literacy standards may be more complex and more contentious. Within the Common Core itself, there is a division that segregates English language arts (ELA) literacy from literacy in history/social studies and literacy in science, and technical subjects. While the standards are remarkably similar across these disciplines specific textual features and desirable components are only articulated within appendicies to the to the ELA area. Non ELA participants could delve into this literature to exploring issues such as lexile guidelines. However, the example texts and analyses provided present a largely humanities/liberal arts bias. The 2010 National Teacher of the Year pointed out that "Often, our nod to nonfiction is the autobiography or true-story version of something, but there's a real gap in other kinds of nonfiction." (Gewertz, 2012 p. 10) There is some strengthening of the association of significant historical texts to the ELA curriculum, but the overall guiding concerns are not necessarily met by this. "The common standards' emphasis on informational text arose in part from research suggesting that employers and

college instructors found students weak at comprehending technical manuals, scientific and historical journals, and other texts pivotal to work in those arenas." (Gewertz, 2012 p. 11) In order to address this concern, the players that need to be brought to the table cut across several traditionally academic disciplines in addition to CTE. The paradigm is exceptionally complex, and even within only the academic arenas there is some defensiveness surrounding change. "While we think the emphasis on informational text is a useful idea, our concern is that it could move from being an emphasis to a sole approach," Richard M. Long, the director of governmental relations for the International Reading Association, said. "Using fiction has many positive and useful values, and it shouldn't be lost or pushed so far to the sidelines that it disappears." (Gewertz, 2012 p. 11)

Bridging gaps with regard to literacy both between academic departments and with CTE requires an even more broad perspective that is dependent on the development of trusting and respectful relationships. CCSS emphasis on information literacy causes a re-definition of what literacy is overall. By supporting this notion and participating in the problem solving that it creates, CTE could better position itself within secondary education overall.

CONCLUSION:

The strategic approach emphasizing the importance of building connections as a means to successfully integrate CCSS in CTE seems to be practical and pragmatic. Furthermore guiding efforts within a context of expectation and monitoring increases the likelihood of results. Integration is important because it will ensure the quality of education provided to students. By defining responsibilities in terms of participation and collaboration, the consortium avoids becoming bogged down in details, preferences, biases and politics. They present roles that can be taken on and steps that can move CTE in a good direction towards improved academic integration.

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