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Dissect, Design, and Customize the Curriculum

by Christopher H. Tienken, Academic Editor

Education bureaucrats in 45 states have approved the Common Core State Standards ([CCSS], 2010) as the de facto national curriculum. The implementation of the CCSS will be monitored by a national standardized test in language arts and mathematics. The confluence of a standardized curriculum enforced with a standardized test will entrench a one-size-fits-all approach to public schooling, unless educators act at the local level to blunt some of the force of the initiatives.

Curriculum customization is one method educators can use to reshape the CCSS. I argue that educators must dissect the Standards into their component parts to scaffold instruction and customize the generic content to meet the needs of the students for which they are responsible.

One Size Fits Few

Although there is no independent, empirically verified research that demonstrates the efficacy of the CCSS, the developers marketed them as a single best path to college and careers (Mathis, 2010; Tienken, 2011). Thorndike (1924), Thorndike and Woodworth (1901), and others demonstrated many years ago that there is not one best path that can prepare all children to attend one of the more than 4,400 colleges in the United States (Aikin, 1942). Similarly, one curriculum scope and sequence cannot form the basis for successful entry into the tens of thousands of career options (Tienken, 2012).

The results from reviews of the CCSS revealed an increase in cognitive complexity in some areas of mathematics and language arts compared to existing state curriculum standards (e.g. Porter, McMaken, Hwang, & Yang, 2011). The generic approach taken by the developers of the CCSS all but guarantees that there will be cognitive mismatches between the content that the CCSS and national standardized testing specifications mandate and what some students can master at a given developmental stage. Simply downloading the CCSS and handing them to teachers will not be an effective option if one's goal is to meet the needs of all students.

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Dissect

School administrators and teachers need to conduct collaborative reviews of the CCSS in light of the student populations they educate. Grade-level teams should examine the CCSS standard by standard. Although the vendors of the CCSS claim that they created fewer standards, in effect, all they did was combine multiple smaller standards into super standards. Many of the CCSS (2010) have multiple learning objectives embedded within them. Teams of educators at the local level need to dissect each standard and break it into its component learning objectives in order to understand more fully what students must master and how to best organize the content for them.

For example in mathematics, Grade 1 Standard 1.OA.A.1, Operations & Algebraic Thinking (CCSS, 2010), reads:

> Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

A closer look at the standard reveals at least 12 sub-objectives that students must master to demonstrate mastery of the entire standard. The various objectives represent different levels of cognitive complexity:

1a(1). Use addition within 20 to solve word problems involving situations of adding to unknowns in all positions by using objects, with a symbol for the unknown number to represent the problem.

1a(2). Use drawings, with a symbol for the unknown number to represent the problem.

1a(3). Use equations, with a symbol for the unknown number to represent the problem.

1b(1). Use subtraction within 20 to solve word problems involving situations of adding to unknowns in all positions by using objects, with a symbol for the unknown number to represent the problem.

1b(2). Use drawings, with a symbol for the unknown number to represent the problem.

1b(3). Use equations, with a symbol for the unknown number to represent the problem.

1c(1). Use addition within 20 to solve word problems involving situations of comparing unknowns in all positions by using equations, with a symbol for the unknown number to represent the number.

1c(2). Use objects, with a symbol for the unknown number to represent the number.

1c(3). Use drawings, with a symbol for the unknown number to represent the number.

1d(1). Use subtraction within 20 to solve word problems involving situations of comparing unknowns in all positions by using equations, with a symbol for the unknown number to represent the number.

1d(2). Use objects, with a symbol for the unknown number to represent the number.

1d(3). Use drawings, with a symbol for the unknown number to represent the number.

Develop

I argue that sub-objectives 1a(3), 1b(3), 1c(1), and 1d(1) represent more cognitive complexity because they require students to work only with mathematical symbols, not concrete materials like counting objects or pictures. They represent something closer to Piaget's (1970) advanced concrete cognitive thinking. The educators in some schools might have to develop a curriculum that includes more scaffolding of concrete experiences to build the prior knowledge necessary to work with only symbols if the students in the school lack the prior life or academic experiences needed to assimilate abstract concepts easily. Educators might have to design more differentiated tiered activities in the curriculum units to provide support within students' zone of proximal development (Vygotsky, 1978).

Conversely, in other schools and districts, more students come to first grade already able to manage complex material. They come with more prior experience and background knowledge (Hart and Risley, 1995). Therefore, the educators might decide not to put much emphasis on sub-objectives 1a(1), 1a(2), 1b(1), 1b(2), 1c(2), 1d(2), and 1d(3). They might choose to differentiate the curriculum complexity beyond the mandated CCSS. But the decisions cannot be made if the school administrators and teachers do not know what content is embedded in the standards. Dissection is a required component of curriculum development and customization in the one-size-fits-all era. I am not saying that teachers must teach the standards in isolated parts, but they do need to know the contents of each standard so that they can customize the curriculum to the needs of their students.

Customize

After dissecting the Standards into their teachable parts, educators must connect the static curriculum objectives to the students. That is, they need to bring sense and meaning to the curriculum. Dewey (2011), Thorndike (1924), and other educators and psychologists wrote about the concept of knowledge transfer and curricular connectedness: students should be able to use knowledge and skills to solve problems in authentic situations. Social forces and current events provide fertile ground for creating integrated curriculum units based on problems, scenarios, or projects.

Not only are the CCSS written in ways that mask the true amount of content students need to learn, but they also do not include a scope or sequence or other ideas on how to organize all the content in meaningful ways. Because more students can do and remember more when the content makes sense and has meaning to them, educators can create a scope and sequence made up of integrated units based on problems and themes that provide students opportunities to use their knowledge to create solutions and products for problem-based, scenario-based, and project-based units. Educators must help to bring the content to life for the students they teach. They need to customize.

Concluding Thoughts

Customizing the CCSS around relevant problems, projects, and scenarios provides opportunities for students to use and create knowledge and information rather than imitate or regurgitate information. Customization can provide students opportunities to be knowledge entrepreneurs (Zhao, 2012) instead of automatons or simply receptacles of information (Freire, 2000). When educators approach curriculum development from the mind-set of customization, it provides opportunities to use their educational imaginations (Eisner, 1994) to create courses, units, and lessons that bring sense and meaning to the content. Customization increases the chances that more students will learn more and be able to use what they learn in the real world.

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