Cycling Through a Connected Curriculum

by Brent Harper, The Bear Creek School

I have never in my ten years of teaching seen anything as fruitful and dynamic as the integration of core classes with a focus on specific time periods. My current seventh grade students learn more deeply, make more connections, and find more meaning in literature than any group of students I have taught. The explanation for this startling success is an integrated curriculum. The English, history, and Christian studies departments at the Bear Creek School have established a new curriculum in upper school and middle school this year, and lower school will soon follow. This curriculum is integrated horizontally, with each grade level focusing on either the ancient, medieval, or modern world in those subjects, as well as vertically, with this sequence cycling three times throughout the curricula in grades 2–11. In other words, the students in grades 2, 6, and 9 study the ancient world, students in grades 3, 7, and 10 study the medieval world, and students in grades 4, 8, and 11 study the modern era.

Humans learn when their brains successfully store information in long-term memory, and we know there is one surefire way to facilitate this transfer from short-term to long-term memory: repetition, repetition, repetition. There are, however, two important variables that make repetition work really well. The first variable is the time interval between the repetitions. Research has shown that our brains learn information best when it is repeated and reinforced every 90 to 120 minutes. This is one reason why those last-minute cram sessions never work for retaining information. Even if we repeat the information hundreds of times in an hour, we are likely to have forgotten what we learned a few hours later. Moreover, having discovered that the transfer from short-term to long-term memory can take years to complete, researchers have argued that knowledge is best retained when information is reinforced after an interval of two to three years.

This knowledge about repetition and retention is fairly recent and runs contrary to the whole structure of the modern school system with its division of the class day into hour long periods on different subjects. The consequence of this system is that right at that critical 90–120 minute window when students should be reinforcing the information learned in the previous class period, their minds are struggling to learn new information in a completely different subject.

As if this daily difficulty was not enough, the modern school curriculum also expects students to progress through the stages of a given discipline year after year with little or no repetition of knowledge from previous years. A glance at almost any school's history curriculum will demonstrate that there is almost no repetition. It is simply expected that students have retained what they have previously learned; however, from my college teaching experience, I can safely say that these students remembered little or nothing about ancient and medieval history, not even big names like Constantine or Charlemagne.

Okay, so they don't remember the Dark Ages. No big deal; that's why we call them the Dark Ages, right? But certainly these students should remember the American history they learned just prior to graduation, right? Not according to the National Center for Education Statistics. Alarmingly, only 45% of high school seniors in both public and private schools passed the 2006 National Assessment of Educational Progress (NAEP) for American history.

Prompted by embarrassingly low scores like this, American schools have begun to realize that their traditional system is not conducive for helping students retain information in their long-term memory. Indeed, since the late 90s, most schools have been trying to push the idea of creating connections across the disciplines. How is this done? Teachers simply mention other subject areas during their own 90-minute period, prompting the students to remember, and thereby reinforce, information every 90–120 minutes or so. This seems promising, but the latest NAEP test results from 2010 showed that only 45% of graduating seniors were able to pass, the same percentage as in 2006. Future tests will likely reveal that a haphazard connection between the disciplines does very little to help students. It seems that the time interval between repetitions is not enough. But, remember, there were two variables deemed most important in repetition. The first is the time interval; the second is the importance of complex connections.

According to brain researcher

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Dr. John Medina, we learn information better if we memorize it in combination with other closely connected pieces of information. For example, imagine that you are in my English class, studying Roland, the hero of the medieval epic, *The Song of Roland*; he was a Christian leader who had arrogantly refused to summon help when Islamic forces ambushed his army, but later, realizing his error, blew his horn for help and died defending the pass into France. That is all good, but you will remember him better if you know that he served under Charlemagne, that he fought to push back the Islamic forces that had recently invaded France, and that Boromir, the famous character from Tolkien's *Fellowship of The Ring*, was based on Roland. Boromir, like Roland, arrogantly tried to take the Ring, but later, realizing his mistake, died blowing his horn for help.

The secret is that the information has to be memorized with connected information, not just information that happens to be from the same discipline. The problem with many schools' integration of curriculum is that the associations being made by one teacher are not connected enough to what was learned in another class. Sure, the math teacher says that Arabic numerals were first introduced into Spain in the tenth century, and the history teacher mentions Newton's seminal work, *Principles of Mathematics*. Both teachers mention the other discipline, but their information has no logical or necessary connection. The students listen to the information, and, lacking any larger context for that information, quickly lose it. As an example of this, try answering the following two questions without looking at the previous sentences.

1) What did Roland do when he realized he needed help? and 2) Who wrote the *Principles of Mathematics*?

Number one was likely easier to answer, even though number two had been mentioned a mere four sentences earlier.

While research supports Bear Creek's practice of integration, our real source of inspiration for this method of teaching comes from biblical tradition. For two thousand years, Christians have used the Bible as their main source for learning language, literature, theology, and history. It is worth pondering the beauty of the biblical narrative in which God's divine revelation to the world is revealed in history. More than a history of God's plan, the Bible is also an amazing literary masterpiece, blending within its narrative a complete compendium of all literary and language devices. The Spirit has woven history, theology, and literature into an integrated whole that moves chronologically, age by age, toward the Savior. If Christian education is truly a teaching that follows the Bible, then the integration of the subjects with a focus on a chronological progression of the ages is a must for Christian schools.

It is here in the last stage of the trivium that the real value of a classical Christian education becomes apparent. The distinct advantage of the trivium's classical stages is the way that true intellectual depth can be developed.

The Bear Creek School is not just "Christian" but also classical. And this new curriculum integration is as classical as it is Christian. The ancient Greeks and Romans were onto something when they based their educational system upon the trivium, which helped students reinforce information as they moved through the grammar, dialectic, and rhetoric stages of learning. Not only does this approach encourage the repetition of material every three to four years, it also shows a remarkable understanding of how the human brain develops. The grammar stage focuses on the acquisition of a fact base and is very well suited for younger children whose brains are made to be super-absorbers of information. In this rotation through the historical cycle, the basic facts of the ancient, medieval, and modern historical periods are introduced and reinforced so that the child has a factual foundation that will be the basis of more detailed information in future stages.

By sixth grade, the child's brain is starting to refine knowledge, comparing and contrasting information and trying out logical deductions and inductions. This, the dialectic stage of the trivium, arrives just in time for the second rotation through our historical cycle. Now the information learned in the grammar stage is reviewed and refined as the students move through the historical periods again. More depth is added in

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history, and in English students start to read the original classics of the time period, making deeper connections and understanding the literature far better than they would if they did not have such a rich historical context.

After middle school comes the third stage of the trivium: the rhetoric stage. Armed with deeper knowledge and sharper logical tools, students will be ready for the third rotation through the historical cycle, once again moving through the ancient, medieval, and modern eras. This time around, their Christian studies courses are integrated into the historical sequence along with history and English.

It is here in the last stage of the trivium that the real value of a classical Christian education becomes apparent. The distinct advantage of the trivium's classical stages is the way that true intellectual depth can be developed. The information learned at the grammar stage is only deepened at the dialectic stage and the rhetoric stage, so that the student has a trove of connections for thinking critically about history, literature, and Christianity, among other disciplines. One of the key problems of the modern educational system is that schools try to teach everything, leading many educators to joke about a curriculum that is a mile wide and an inch thick. In other words, students' knowledge base, while broad, is too shallow to sustain critical thought. The Bear Creek School wants to encourage intellectual strength by enriching students with deeper knowledge so that they can practice writing detailed analytical essays, or participate in class discussions where stronger arguments are expected due to the depth of the subject.

What excites me most about the Bear Creek School is how we are passing down a legacy to our children. The Israelites, Greeks, and Romans bequeathed to us a cultural legacy—a legacy of literature, revelation, philosophy, and government. The men and women of the Middle Ages studied these works, adding and blending Christian ideas into the literature, philosophy, and governmental theories. And the modern world rose to new heights by standing on the shoulders of the giants before them. Science rediscovered the atom, first postulated by the Greek philosophers, while the Founding Fathers modeled their new government on the government of the Roman Republic, and the rising business class based their success on the fiscal tools developed by medieval Italian merchants.

These traditions stretch back in time, each generation taking up from the previous, and leaving its legacy for the next. As Christianity spread, generation by generation, new people became the heirs of this legacy. The Western spiritual and intellectual history became their inheritance as surely as the Bible and the Kingdom of God became theirs. Regardless of where we are from, we are all, as Americans and Christians, heirs to Israel, Greece, and Rome.