



eMonograph

Spring 2016

Teaching the Faith, Technology, and Education

by
Bernard Bull

Editorial Team: Sharon Stadtwald, Edward Grube & Kathy Slupik
Lutheran Education Association
March 2016

© 2016 Lutheran Education Association (LEA). 7400 Augusta Street, River Forest, Illinois 60305
www.lea.org lea@lea.org

This document may be copied and printed for use by members of LEA.

...we must also reconsider how we go about the good and important work of Christian education in the 21st century.

Now imagine using a gavel to help you build a birdhouse or a judge opting to use a sledgehammer instead of a gavel.

Teaching the Faith, Technology, and Education

Technology is not a neutral tool; it is values laden. Christian educators have both the challenge and the opportunity to help learners discover this, recognize the relevance of God's Word upon life in a technological age, and learn how to face the challenges and embrace the opportunities of faith, life, and learning in the contemporary landscape. To do so, we must also reconsider how we go about the good and important work of Christian education in the 21st century. This monograph strives to support, illustrate, and explain these claims, offering next steps for those invested in contemporary Christian education.

Technology is Values Laden

If you have attended a presentation on educational technology in Christian schools, you probably have heard presenters comment, "It is not about the technology." They usually continue by claiming that "technology is just a tool." This tool-based approach to technology makes intuitive sense, but it also risks missing several important facts about the role of technology in faith, life, and learning. I offer a definition of technology that has promise to serve us in thinking more deeply about the nature and role of technology in Christian education, as well as to give us an important clarification about the role of values in technology.

If technology is just a tool, what is a tool? One common definition states, "a device or implement, especially one held in the hand, used to carry out a particular function." In other words, specific tools are created only for specific uses. A hammer is not good or bad. It is just a tool. If we claim that a hammer is just a tool, and that it all depends upon how we use it, then we might conclude that it is not the fault of the hammer if someone happens to use it to hit another person on the head, and that would be a reasonable claim. However, it is a fact that most hammers are created to hit things. In fact, different hammers are created to hit different things. While it is not the intent of a hammer to hit a person on the head, one is more likely to do that with unpleasant results than if the same person were holding a pillow. Consequently, we are more comfortable letting small children play with pillows than with hammers. When they are old enough to understand the benefits and dangers of using a hammer, we let them use such tools. Some hammers have specific uses. A [ball-peen](#) hammer, for example, was not created for the same purpose as a carpenter's hammer. [Rock-climbing](#) hammers are devices to aid climbers, not to build things or to do metal work. Or consider the fact that a gavel, a judge's hammer, is mostly a communication tool, as well as an indication of a judge's authority. Now imagine using a gavel to help you build a birdhouse or a judge opting to use a sledgehammer instead of a gavel. While it might reinforce the judge's authority, it could also put a hole in the desk.

Is technology neutral? Is it just about how a person uses the technology? Or does the design of the technology itself affect how one uses it? The hammer illustrations suggest that every technology has affordances (benefits) and limitations. It makes certain things possible and more likely, and when something is more possible, we tend to think about that possibility. Sitting in front of a block of concrete that needs removal with a ball-peen hammer in one's hand will not lead

most of us to start chipping away. Sitting in the same place with a sledgehammer is far more likely to lead and inspire us to think about taking a swing. The affordances or benefits of a technology lead us to consider possibilities that were otherwise hidden. Similarly, technologies have limitations. The limitations of that ball-peen hammer include the fact that it is not an especially useful tool for a person needing to break up a concrete block.

Perhaps a different definition will help us think more broadly about technology in faith, life, and learning. Technology is applied systematic knowledge. We discover something, learn about how something works or functions, and then we use that knowledge to design a tool or collection of tools to help solve one or more real-world problems. That design is technology knowledge applied to meet a need in the world. A carpenter needed a way to join different types of wood. As human knowledge progressed, people invented nails and hammers as technologies to help accomplish such tasks. To say that the hammer and nail are just neutral tools would not make sense in this context. The tool was created to solve a specific problem. Hammers like nails more than screws. It is not just about how the wielder of the hammer uses it. Regardless of the user's skill or intent, hammering screws produces unhelpful results, as an uninformed, aspiring carpenter who ignores such facts will learn if he tries pounding a screw through two pieces of wood.

There are important exceptions to this. It is possible to “hack” a problem with a hammer. A *hacker* can be seen as a person who uses technologies and resources in unexpected and often creative ways, using a tool to solve a problem for which it was not intended. One might, for example, use three hammers to entertain someone by showing how a skilled person can juggle them. One might be locked in a room and use a hammer to break out. Those old enough to remember the television show *MacGyver* from the 1980s and 1990s, are well aware of *hacking*, using available tools in unexpected ways to solve a pressing problem.

While it is possible to ignore the intended purpose of a given technology, things do not always work out. We might fail in these efforts, or we might succeed only to find one or more unintended consequences. I can use a sledgehammer to solve a carpentry problem, but it might leave a few more dents and scratches than if I used the tool designed for the job. What does this extended example have to do with faith, life, and learning in a technological age? I offer five important lessons.

1. Our definition of technology is too narrow, not leading us to consider the full impact of our technological decisions on Christian schools.
2. If technologies have intended uses, we are wise to get informed about those uses, learning about the affordances and limitations of the technologies in our schools and lives.
3. Current educational technologies are not as simple as the hammer example. Their intended uses are more complex and less

...we are wise to think about unexpected consequences of using a given technology in a particular way.

obvious. Prayerful and thoughtful reflection, however, can help us make wise decisions.

4. Since the intended purposes of technologies are not as apparent as with the hammer example, we are wise to think about unexpected consequences of using a given technology in a particular way.
5. There is room for Christian hacking in the contemporary world, using technologies in ways that may not have been intended, but doing it in pursuit of the mission and ministry of Christian education.

I will expand on each of these five points in the following sections.

Broadening Our Definition

If we accept the proposal of a broader definition of technology, as applied systematic knowledge, we soon discover ourselves surrounded by technologies, even in what we otherwise thought of as the most low-tech school or classroom. While many think of technology in terms of computer technology, this broader definition invites us to think about hundreds, even thousands, of educational technologies in our schools: bell schedules, pencils and pens, school desks, the configuration of classrooms, school architecture and classroom design, grading systems, intercom and communication systems, lesson plan templates, textbooks, curricula, even school policies and classroom management models. Each of these is an example of applied systematic knowledge, of technology. Inventors of such things gathered existing knowledge on the subject, organized it, and designed something based upon it to address a specific problem. Of course, technology also includes things like the Internet and the devices we use to connect to it, student information systems, gradebook software, interactive whiteboards, cell phones, and web-based software and tools.

...educational technology and schools are inseparable.

This leaves us with a significant challenge and opportunity to better understand how all these technologies influence the mission and ministry of Christian education.

This broader definition of technology shows that educational technology and schools are inseparable. There are few schools today that do not make heavy use of educational technology. In fact, even the way that we study subjects is a technology. Consider the fact that many approach social studies as a distinct subject from science, math separate from language arts, and art separate from physical education. These are not God ordained divisions of content areas. They are taxonomies and organizational systems to help us categorize knowledge. This leaves us with a significant challenge and opportunity to better understand how all these technologies influence the mission and ministry of Christian education.

Exploring Intended Uses, Affordances, and Limitations

With this broad definition of educational technology, we have the challenge and opportunity for prayer and study about the intended uses, affordances, and limitations of that technology. Interestingly, there are no books (books, by the way, are an educational technology) that address the broad spectrum of school technologies in this way. We are often left to do our own homework (homework, by the

“What is the problem to which this technology is the solution?”

Such explorations also help us, as Christians, to maintain a sense of what is flexible and what is nonnegotiable in the mission and ministry of Christian schools.

...there is a difference between the unchanging truths of God’s word and the constantly changing world in which we live out those truths.

way, is also an educational technology), which requires more than a cursory review of one resource on the subject. Instead, we find ourselves needing to research, to find lesser known and referenced resources. Books, online sources, and journals on the history of education provide helpful starting points.

Consider, for example, the fact that the contemporary letter grade system is, in the big picture, a young technology. A review of resources on the history of letter grades reveals that they were first used in the United States in the early to middle 19th century. Prior to that, education did not use the letter grade system. A fuller understanding of this educational technology requires that we examine research to discover the intended use of the letter grade system, reflecting on the affordances of such a system as well as its limitations. Only when we engage in such work do we begin to discover how this technology helps and hinders the mission and ministry of Christian schools in a specific time and location.

[Neil Postman](#), a prolific author and social critic from the twentieth century, suggested that one ask the question, “What is the problem to which this technology is the solution?” Consider that question with the grading system. What problem was the grading system created to solve? Does that problem still exist today? Is it the best solution available? Are there alternative solutions that better align with our distinct mission, vision, values, and goals in Christian education?

Sometimes our exploration of such questions provide us with surprising insights into the original purposes of technologies that we use in our schools. Continuing with the example of the letter grade system, some trace its origins back to a Cambridge University tutor, William Farish, who allegedly created the letter grade system because he was paid per pupil, and this system allowed him to take on more students. In other words, it is possible that the letter grade system was mainly created to address the financial situation of a single educator in the 1700s, and yet look at its varied uses today.

Such explorations also help us, as Christians, to maintain a sense of what is flexible and what is nonnegotiable in the mission and ministry of Christian schools. By discovering the human origins behind many modern technologies associated with schools (things like bells, desks in straight rows, traditional letter grade systems, mobile devices, blended and online learning models, etc.), we also find ourselves free to explore new options that might better serve our students and allow us to more effectively live out our distinct mission and identity. We come to further recognize the elements of Christian education that are central and should not be changed, while simultaneously discovering that the vast majority of our practices, policies, procedures, models, and methods are neither commanded nor forbidden in Scripture. We discover the same important truths that inform the good and important work of missionaries, namely that there is a difference between the unchanging truths of God’s word and the constantly changing world in which we live out those truths.

This discovery also empowers us to embrace the doctrine of vocation, which is inherently tied to God’s call for us to love our neighbors. By revealing the original purposes behind many of the educa-

Bell schedules, desks in rows, and letter grades to rate the quality of student work have parallel practices in factories and other workplaces which emerged from the industrial revolution.

Many current web-based technologies, ranging from social media...to image and video sharing services...had significant usage outside of schools before they were widely applied in schools.

...these are reminders that companies often do have the same values and priorities as learning organizations, especially Christian schools.

The study of affordances and limitations recognizes that any technology has benefits and limits.

...it becomes important to spend time in prayers, study, and collaboration with colleagues to help us make informed decisions about these matters.

tional technologies in our schools, we have the exciting opportunity to ask a question that is deeply rooted in the doctrine of vocation. What will help us to love our neighbors at this time and in this place and context? When we consider use of a given technology, whether it is plans for a [1-to-1 device](#) program at our school, a new curriculum, the [Common Core State Standards](#), or a grading and assessment plan for students, we do so with the intention of discovering what will best help us love these young neighbors while also considering how a given technology might tempt us to ignore or fail to love other young neighbors. In other words, we seek to surface the affordances and limitations of the technology, given our goal of loving our neighbors through the mission and ministry of Christian schools.

Looking at the history of technology in education reveals a consistent trend. Many technologies embraced in education are informed by the use of similar or the same technology outside of education. Bell schedules, desks in rows, and letter grades to rate the quality of student work have parallel practices in factories and other workplaces which emerged from the industrial revolution.

Many current web-based technologies, ranging from social media ([Facebook](#), [Twitter](#)) to image and video sharing services ([YouTube](#), [Pinterest](#), [Flickr](#), [Vimeo](#)), to productivity applications ([Google Docs](#)) had significant usage outside of schools before they were widely applied in schools. The same is true for cell phones, which initially were largely restricted in schools but have more recently become tools for teaching and learning. We see this even more clearly with the use of games and toys by educators in the classroom ([Legos](#), [Minecraft](#), and [Wii](#) games). These are often technologies that were not initially designed to address educational problems. While some companies notice the increased educational interest and seek to retool their products and services considering the needs of these new customers, others pay less attention to the distinct needs of schools. In all cases, these are reminders that companies often do have the same values and priorities as learning organizations, especially Christian schools. This requires teachers and educational leaders to take the responsibility for careful review, leading the charge for prayerful educational evaluation of the technologies, again looking at affordances, limitations, and alignment with the school mission, vision, values, and goals (See Appendix for a list of guides for evaluating educational software and other technologies).

God's Wisdom in Complex and Messy Situations

The concept of affordances and limitations is important and distinct from asking about what is good or bad. The study of affordances and limitations recognizes that any technology has benefits and limits. No single technology is free from downsides. As such, it becomes important to spend time in prayer, study, and collaboration with colleagues to help us make informed decisions about these matters. Many newer educational technology decisions in Christian schools are informed by learning about new possibilities for teaching and learning. For example, using devices connected to the Internet as part of formal schooling can be justified in many ways. We return to Neil Postman's question, "What is the problem to which this technol-

...a second question... "What possibilities are made available by this technology?"

ogy is the solution?" I will add a second question to that: "What possibilities are made available by this technology?"

Posing these and similar questions to educators and administrators in Christian schools will produce different answers. We might hear responses like: Using such tools and technology ...

- is an important public relations and marketing strategy, so that people see us as providing a comparable education to the public schools.
- gives us access to an unprecedented amount of free resources.
- helps us equip students for life in a connected world.
- allows us to create more customized and personalized learning experiences for students, which further helps us embrace our call to meet the unique needs of each learner and not teach all learners as if they were the same.
- engages students who grew up in the digital world.
- increases student learning.
- gives us a chance to help students develop the skills to be life-long, self-directed learners, using the many free and online resources to continue learning well beyond formal schooling.
- allows us to connect with people and resources around the world, discovering more diverse perspectives and ideas.
- allows us to connect with Christian classrooms in different parts of the world, allowing global partnerships around teaching and learning in Christian education that were impossible in the past.

One need not agree with each of these reasons; however, these are the types of affordances that people might point to when thinking about the adoption of a given technology or set of educational technologies. It is important to be informed about such affordances for each of the educational technologies that we use, as well as ones that we consider using in the future. Similarly, it is important to recognize the limitations and the biases associated with them. Using such tools and technology...

- is expensive and might take away from investments in other critical aspects of Christian education ministry.
- risks exposing young people to inappropriate content and resources.
- risks distracting students from education fundamentals.
- can turn the classroom into something that focuses on "bells and whistles" and less on the important skills and content that we want to teach.
- can lead to classroom management problems.
- risks reducing the amount of face-to-face interaction among students and teachers.
- may not allow the teacher adequate control over when and how students engage in learning.
- contributes to young people who are more connected to devices than they are to the people in front of them.
- promotes a digital divide between students with rich technology resources at home and those who do not have such resources.

Again, the items in these incomplete lists of affordances and limitations are debatable. Even among prayerful and thoughtful Christians, there is significant room for debate about these matters. Nonethe-

Adoption of a new educational technology may require relearning, unlearning, uncomfortable ambiguity, changing roles of different stakeholders, even the need to explore new and different personnel for a given Christian education ministry.

God commanded His prophets to use current and sometimes emerging technologies, like writing, to pass His words to future generations.

Consider the...uncomfortable transition of German Christian schools from instruction in German....to the language of the majority of the United States.

less, they drive us to be more informed and intentional about our choices. That the topics are debatable does not negate the fact that the wisdom in God's Word can inform our decisions. It may well be that the wise decision in one context is unwise in another. God's Word is unchanging, but we must engage in ongoing prayer and study to discern how the truth of God's Word best applies in different times and contexts.

The vocational question about how to best love a given neighbor or group of neighbors helps with this. This is where prayer and God's word remain central to all decision making in Christian education ministry, not to mention in the entirety of our lives as Christians. This approach also challenges us to pray for God's help in setting aside our personal biases, agendas, and preferences, our attachments to educational practices that are neither commanded nor forbidden in Scripture, and our temptation to make decisions that are primarily about what makes things easiest for us. For example, educational innovation can be challenging for students, parents, teachers, and administrators. Adoption of a new educational technology may require relearning, unlearning, uncomfortable ambiguity, changing roles of different stakeholders, even the need to explore new and different personnel for a given Christian educational ministry. We find ourselves challenged to join John the Baptist in saying, "He must increase but I must decrease." We join St. Paul in remembering to "Let each of you look not only to his own interests, but also to the interests of others" (Phil. 2:4), and "I have become all things to all people so that by all possible means I might save some" (1 Cor. 9:22). Educational ministry in a constantly changing technological world calls for unwavering commitment to our biblical and theological foundations, while also being ready to, "lay aside every weight and sin which clings so closely, and let us run with endurance the race that is set before us" (Heb. 12:1).

In our search for and consideration of new technologies, we may learn from bold but humble adoption of educational technology throughout the history of Christendom and more specifically Christian education. In a time of changing technologies, God commanded his prophets to use current and sometimes emerging technologies, like writing, to pass His words to future generations. In the early church, writers of the Epistles used what could be compared to blended and distance learning strategies by using the technology of writing and letters to teach while being at a distance from a given group of people. Church reformers leveraged the printing press and mass produced books to communicate and teach. Consider the groundbreaking use of [catechisms](#) in the history of Christian education, the uncomfortable transition of German Christian schools from instruction in German (the heart language of the school and church leaders) to the language of the majority in the United States. These would not have been easy transitions. Each of these new technologies would have posed affordances and limitations. And yet, God's work was done through them.

The same is true today in Christian education, but technological innovation has not stopped. As technologies change, the type of education that students need for different times changes, and our minis-

We find ourselves, like Christian educators before us, grappling with affordances and limitations, prayerfully seeking to make decisions that will allow us to continue to provide a valuable ministry to diverse young people and families.

When it comes to emerging technologies, we are also wise to heed insight from current and emerging research.

Information literacy is a critical skill not only for students, but also for teachers and administrators.

try opportunities and contexts change. We find ourselves, like Christian educators before us, grappling with affordances and limitations, prayerfully seeking to make decisions that will allow us to continue to provide a valuable ministry to diverse young people and families. What we cannot afford is to mindlessly or arrogantly rush ahead with educational technologies, while labeling those with questions and reservations as [Luddites](#), backwards, or self-serving.

The conversation is important. The adoption of writing, for example, generated grave concerns for people like [Socrates](#), who believed that writing would dull the memory. Of course, it is writing that allows us to even know that Socrates supposedly made such a claim. Yet, Socrates was correct; reliance on memory has declined. That decline was one limitation produced by the adoption of writing. Nonetheless, there were enough affordances to writing that we find accounts in Scripture of God commanding people to write something down and to pass it on to future generations. In other words, we move forward in the prayerful and thoughtful use of technologies but do not move forward blindly or uninformed. We listen and learn from different perspectives, carefully evaluate affordances and limitations, considering what will best help us love our neighbors in a given context, we pray and study God's Word for insight, and then we make a decision. We can revisit our evaluation over time to ensure that it is still a wise direction, but this is the nature of technology in Christian education.

When it comes to emerging technologies, we are also wise to heed insights from current and emerging research. Early adopters of educational technologies have little research to help inform analysis of the affordances and limitations of a given technology, but the rapid sharing and dissemination of knowledge in the information age make it possible to garner significant insights, even on some of the newest tools.

The [iPad](#) was first released in 2010. Early adopters promptly started using the technology (or, more accurately, this integrated collection of and portal to thousands of technologies), and many Christian educators spoke about its promise, while others cautioned that only limited data existed to inform decisions about its adoption in the classroom.

Fast forward to 2016, and we have significant research on [1-to-1 programs](#) in schools, hundreds of case studies of iPad and other mobile device usage in schools, and thousands of educators and administrators with whom we can connect and interview in our own deliberations about if or how to use such devices. Nonetheless, many still move forward after consulting only one or two sources, not taking the time to benefit from the abundant information available on the subject. While we can be paralyzed by analyzing the overwhelming amount of information available, being well informed when making such decisions yields ample benefits. [Information literacy](#) is a critical skill not only for students, but also for teachers and administrators.

Even with informed decisions, there can and likely will be unexpected consequences to adopting new educational technology. Con-

Continue to explore the potential consequences, even as you adopt and use a give technology.

sider the [failed 2013 iPad initiative in the Los Angeles](#) public schools. A well-resourced team of decision makers met with several challenges that led them to cancel the program and collect all of the iPads they had recently distributed to each student.

Given the inevitability of unexpected consequences, how do we prepare for this? This brings us back to the mission, vision, values, and goals of the school. With any new innovation or educational technology adoption, start with a plan to collect data about how things are going, what is working well, and what is not working well. In other words, the challenge of examining the affordances and limitations is not simply something that we do in advance of adopting a new technology. Continue to explore the potential consequences, even as you adopt and use a given technology. This calls for ongoing reflection and data collection. Develop a plan for the type of information you want to collect. Consider the following questions and how a school or teacher might collect data on these questions in an ongoing way.

- What is working
- What is not working?
- Are there obvious solutions to what is not working?
- If there are problems, are they inherent in the technology or do they arise from our use of technology?
- Are we noticing any unexpected consequences?
- How is this helping to increase student learning and engagement?
- How is it helping us to pursue our mission, vision, values, and goals?
- How is this technology changing the way that we teach and students learn? What are the benefits and drawbacks to these changes?
- Since technologies have values and tend to emphasize certain things and minimize others, what is the technology amplifying and what is it minimizing?
- Since we are called to be responsible stewards of our resources, are the benefits worth the cost of this investment?
- What adjustments could be made to make this work better?
- Are there any students who are not benefitting or are being harmed by the adoptions of this new technology? What can be done to help them?

There are many ways, both formal and informal, to collect and analyze answers to these question. Teacher and student journaling, weekly surveys from different stakeholders (parents, teachers, students), setting time aside to informally talk through one or more such questions with students, conducting informal focus groups and individual interviews to get different viewpoints, and teacher-collected data about student work and behaviors with the new educational technology adoption are all great places to start. Such activities allow us to monitor progress and make adjustments that help us remain focused on the distinct mission, vision, values, and goals of our Christian school.

...hacking also relates to people who enjoy figuring out how things work, modifying and repurposing things, and using technologies in creative, unexpected, and innovative ways.

Most of these are not designed from a Christian perspective, requiring faithful Christian teachers to hack them or be active in repurposing them in ways that ensure God's Word is clear and evident.

...considers the importance of designing learning opportunities and spaces that are conducive to student learning and engagement.

The Christian Education Hacker and Designer

As noted earlier, *hacking* can be understood as using technologies in unintended ways to accomplish a desired goal. Of course, this is not using *hacker* in the popular sense of illegally breaking into people's bank accounts or other malicious computer activities. While some use the term pejoratively, *hacking* also relates to people who enjoy figuring out how things work, modifying and repurposing things, and using technologies in creative, unexpected, and innovative ways. From this definition, one might argue that hacking is a critical skill for Christian educators and administrators.

Christian educators work in a broad educational landscape rich with technologies, programs, curricula, innovations, and policies and laws from government and external organizations. Christian schools need to respect government authorities and external agencies, respond to trends and innovations but also remain faithful to the distinct mission and ministry of Christian education. At times, conflicts between external pressures and the mission of Christian schools is apparent. In other instances, the differences are more nuanced. Either way, Christian schools find themselves in a situation where they need to modify or adapt the educational technologies (keep in mind the current broad use of that term) that are used in public schools.

Consider, for example, the popular [Love and Logic for Teachers](#) discipline program used in many schools. This program represents a philosophy of discipline supported by some research and embraced by many private, public, and parochial schools. It deals, however, with many topics about which God's Word has much to say. When Christian schools embrace this, they do not do so in the same way as public schools using the same program. Parents, teachers, and administrators at Christian schools have the challenge of hacking such a resource, being more explicit about the role of God's word as part of discipline and classroom management. The same is true when schools adopt [digital citizenship](#) curricula, leverage predeveloped blended and online courses from outside sources, and use educational software. Most of these are not designed from a Christian perspective, requiring faithful Christian teachers to *hack* them or be active in repurposing them in ways that ensure God's Word is clear and evident.

With this in mind, conversation about the importance of 21st century design is growing. This is, in many ways, not a new conversation. It considers the importance of designing learning opportunities and spaces that are conducive to student learning and engagement. Within the church, this general concept has been alive and well for centuries. For example, consider the many design considerations that go into a sanctuary. Intentional planning represents the beliefs and values of the church. That is why so many Christian churches have the pulpit, altar, and baptismal font as the three most significant features in a sanctuary. This becomes a visual reminder of the Christian emphasis upon Word and Sacrament. The interior design speaks to the doctrines of the church.

The Importance of Design Thinking in a Technological Age

Many think of integrating the faith as a matter of design, particularly designing a classroom that has ample reminders of our Christian

distinctiveness. There may be posters of Bible passages and Christian quotes, lists of central teachings like the Ten Commandments, graphic organizers that help students to make sense of various Christian teachings, or art that depicts Christian messages or evokes reflection about Christian teachings. And yet, design goes beyond the physical space. It includes classroom rules, formal and informal policies and procedures, decisions about educational technologies, and the intentional planning and preparation of lesson plans and learning experiences. It is within the very design of such things that tenets of the Christian faith are emphasized, minimized, or even distorted. Consider the following examples as both positive and negative illustrations of design.

Design Illustration #1

Imagine a scenario in a Christian school where the teacher provides students with a checklist of skills to master. These could be skills related to grammar, math, science, music, or any other topic. Throughout the year, the teacher provides mini-lessons, helpful illustrations and examples, one-on-one guidance, opportunities for practice, and plenty of good feedback that can help each learner progress toward mastering each skill. As a reward for mastering all of the items on the list, the teacher provides individual students with a digital badge to display on private blogs created by the teacher. The student also gets a cross necklace inscribed with the words, "Jesus Loves Me!"

This teaching and learning design may appear to have some merit. It provides students with an opportunity to take ownership of their learning, potentially including rich computer-based activities. The checklist is a clear statement of what students are expected to learn. The teacher provided numerous planned learning experiences to help students accomplish the items on the list.

What about the reward at the end? If you asked the teacher, he might indicate that this is part of how he integrates the faith. After all, a cross necklace and digital badge reminding the students of God's love is certainly not something that will be provided to students in a public school. That is indeed distinctly Christian. And yet, what potential messages does such a design communicate? What about the students who do not master all of the items on the list? And how might this be understood by different students at different developmental stages? At the risk of being overly dramatic, imagine the final day of class, with all but two students walking out of class proudly bearing their "Jesus Loves Me!" necklaces, and two lone students walking away, not having mastered all of the items on the list and not "earning" a physical and digital reminder of God's unconditional love manifested by His Son's sacrifice on the cross. Looking at it from this perspective challenges us to consider if this well-intentioned design and integration of the faith may risk distorting law and Gospel.

Design Illustration #2

This teacher has been nurturing third graders at the Christian Elementary School for the past 25 years; while she is a wonderfully creative teacher, some things have stayed the same year after year. Here is a quick snapshot of a typical Monday in her class. Each

By the third Monday of the year, students know what to do when they arrive in the morning.

Monday morning, when the students enter the room, the lights are on, the teacher greets each student by name, there is quiet Christian music playing. The teacher has a series of three or four different “devotion centers” set up for the children, all related to a theme for the week. If the Bible theme for the week is “Rejoicing in the Lord always,” you can be sure that the music playing is related to rejoicing, and the devotion centers will all have something to do with that topic, only experienced in different ways. One might be a reading center with a selection of Bible and other stories that relate to rejoicing, along with a large white board for students to jot down quotes or ideas they liked from one or more of the stories. Another center might be an art center, with a collection of pictures, art supplies ready to be used to create “rejoicing art,” and even a pair of digital cameras that students can use to capture moments of rejoicing. A third station would have a coat rack that the teacher covered in construction paper and turned into an artificial tree. This is the prayer tree, and students are invited to draw or write a brief rejoicing prayer and hang it on the tree. There is always one more station in her class as well. This week, it is just an empty space with only one thing in it, a simple plain poster in block letters, “[Philippians 4:4](#).”

By the third Monday of the year, students know what to do when they arrive in the morning. They each choose a station, follow the instructions provided at the station, and then move on with their other morning activities. While the theme and details of the centers change each week, this pattern continues week after week. As class starts, the teacher draws the children together, introduces them to the theme with a story or illustration, and invites them to begin sharing about what they did or created in the centers. She might take a prayer off of the prayer tree, ask students about their favorite quotes in the reading center, and have a student or two share some of their rejoicing art. And she always has a wonderful way of creatively pulling it all together and preparing students for a week of thinking about, experiencing, and learning about the theme.

This is an elaborate design. It clearly takes significant time to create and implement something like this week after week. Of course, a veteran teacher builds from year to year and soon has a treasure chest of great ideas and resources to reuse. In this case, notice the many design considerations. Notice how she organized her day in such a way that she was finished with her own devotions in time to greet the students by name. “We have a God who knows us by name,” the teacher might explain, “so I want to know and use your names too.” Notice also that this is planned for each Monday morning, and it is the first activity of the week. “It is my little way of helping the students recognize that God comes first,” explains the teacher. Besides that, it establishes a theme that can be built upon and referenced throughout the week. There is more to this design as well. You can find hundreds of examples of Christian classrooms that start off each Monday morning with a devotion, but there is something different about this design. The teacher might explain that teaching the faith is more than telling the faith. This teacher wants to create a classroom where students are not just active participants in the devotion, but active participants in helping shape the devotions. By having centers as the first activity of the day, each individual stu-

“Long ago, I learned that God often has profound things to teach me through the children and that sometimes it is best for me to get out of the way...”

dent is invited to be a co-creator of the weekly devotions. And what about that fourth center, the empty space? “Long ago, I learned that God often has profound things to teach me through the children and that sometimes it is best for me to get out of the way. So, why not create a blank center, a blank slate where students can create and initiate something related to the theme for the week?”

Design Illustration #3

Now consider a small Christian high school in an affluent area. The parents have high expectations for their students, with 95 percent of the student body college bound. At the same time, it is a newer school with a smaller faculty. This makes it difficult to offer many electives or higher level courses. To address this, the school administrator was delighted to discover a program through the state community college system, allowing students to take free online courses that receive dual credit. Students count the class toward high school graduation requirements, plus it goes on a college transcript, allowing them to bring those credits to a university of their choice. The school works out an arrangement with the community college and adds several upper level electives to the curriculum.

Of course, this is a public community college, so the curriculum is neither approached nor presented from a distinctly Christian perspective. To address this, the administrator, teachers, and parents design a special supplement for students taking these classes. Students participating in a community college class schedule a weekly lunch meeting with one of the teachers at the high school with the explicit goal of discussing a Christian/biblical perspective on what they are learning. At times, the connections are not readily apparent, for example, when studying math. This supplemental conversation, however, presents a trained Christian teacher with an exciting opportunity to explicitly and intentionally guide students in thinking about the implications of a Christian worldview upon the various subjects. In addition, it provides guidance in instances where students are conflicted about how to live out their faith in a secular learning context.

This design consideration entailed using a largely secular curriculum and learning experience but creating an important supplement that helped the school remain faithful to its mission, vision, values, and educational goals. While there are certainly many perspectives on such a situation, and there are likely many possible ways to approach it, this example illustrates how adoption of something new requires consideration of affordances, limitations, and modifications so that the school's mission is not jeopardized.

Each of these illustrations describes ways in which *design* plays a role in teaching and integrating the faith in ways that go beyond faith modeling and involve the elements included in the construction of a school, class, lesson, or school day. These considerations are critically important to Christian schools adopting new technologies, curricula, and resources.

The Values-Laden Nature of Technology, Design Thinking, and Integrating the Faith

It is important for parents, teachers, and administrators to learn about the values-laden nature of technology so they can make

Each of these illustrations describes ways in which design plays a role in teaching and integrating the faith in ways that go beyond faith modeling...

The study of life in a technological world becomes part of the content integrated across the curriculum...helps teachers guide students into thinking about the nature of faith and life in an increasingly digital world.

The Christian teacher has a similar task: to help students see Truth as represented in God's Word and God's world as clearly as possible.

...it is the task of guiding students to see where God is already present and at work and aiding students to recognize the many ways in which God's Word makes sense in the world.

informed decisions on which technologies to use and how to use them. The study of life in a technological world becomes part of the content, integrated across the curriculum. Such a practice helps teachers guide students into thinking about the nature of faith and life in an increasingly digital world.

Doctors have an interesting task. They have a calling to aid people in seeing the world clearly. An eye exam includes tests that seek to determine the extent to which you can see clearly and accurately or to determine if you have any conditions or ailments that put your future vision at risk. Based upon such tests, the doctor provides a prescription or potential intervention, anything ranging from eye drops to glasses or contacts to corrective surgery. To accomplish these tasks, the doctor must know what constitutes good vision and poor vision.

The Christian teacher has a similar task: to help students see Truth as represented in God's Word and God's world as clearly as possible. It is ultimately the Great Physician who aids us in clear vision. This psalmist reminds us that this is our plea, "Open my eyes that I may behold wondrous things out of your law" (Ps. 119:18).

In 2 Kings 6, Elisha and his servant woke up early in the morning to find King Aram's army surrounding the town, prepared to capture Elisha. Upon seeing the soldiers and chariots, Elisha's servant was clearly distraught. "What shall we do?"

"Don't be afraid," the prophet answered. "Those who are with us are more than those who are with them."

And Elisha prayed, "Open his eyes, Lord so that he may see." Then the Lord opened the servant's eyes, and he saw the hills full of horses and chariots of fire all around Elisha." God helped Elisha's servant to see things as they really were. God did this, however, upon the request and through the tutelage of the prophet Elisha.

The Christian teacher, in some ways, plays a similar role. The role of integrating the faith is not a creative task. Rather, it is the task of guiding students to see where God is already present and at work and aiding students to recognize the many ways in which God's Word makes sense of the world. It is about sharing God's Word and watching the Holy Spirit work, helping us to see ourselves and our world with clarity: We are creations of God, loved by God, born into sin, redeemed by our Savior. We have value, meaning, and a mission all revealed in God's holy Word. To participate in the teaching ministry is to stand alongside learners as God guides us all into seeing such things more clearly.

Not only does the teacher help students to see truth, but the teacher also helps them learn ways in which to go about discerning truth from falsehood, good from evil, right from wrong, and wisdom from foolishness. Each student enters the class with different life

Each student enters the class with different life experiences, beliefs, and values, all of which impact the way in which students see and make sense of the world.

...the realm of what some refer to as worldview studies, exploring the ways in which a person's beliefs and values impact their understanding of the world.

What does God's Word have to say specifically about addition or English grammar,,?

experiences, beliefs, and values, all of which impact the way in which students see and make sense of the world.

As any teacher can verify, students do not enter most lessons as blank slates, even if they have never heard about a topic. The youngest children come with myriad ideas about everything from physics to politics, sports teams to health, much informed by the heavy media diet of the typical young person today. They have beliefs and values about family, entertainment, history, life and death, what constitutes a good story, the role of numbers in the world, the value of reading, what constitutes right and wrong, and even whether or not God exists. Even when students may not have thought about one of these things, they come with life experiences and beliefs that influence how they will think about such topics. Please do not mistake this as only applying to older students. I contend that this is equally true, perhaps especially true of the youngest children in our schools, those in Christian preschools and kindergarten, as much as of those in Christian universities.

This is the realm of what some refer to as [worldview studies](#), exploring the ways in which a person's beliefs and values impact their understanding of the world. Every subject that is taught includes claims about truth and morality. In math, one plus one equals two, not seven. In science, carbon dioxide consists of carbon and oxygen. In grammar, a sentence ends in a period rather than a comma. In reading, each word has a meaning that aids the reader in understanding the text. This is evident, perhaps so evident that it is sometimes taken for granted. Many argue that starting at this foundational point is important when it comes to thinking about the Christian teacher as an eye doctor.

Every subject in school includes claims about truth, and these claims vary in the extent to which they do or do not align with what God has revealed in his Word. The skeptic may point out the many instances where this is not the case. What does God's Word have to say specifically about addition or English grammar, for example? This misses the point of the teacher as eye doctor. This perspective does not claim that every single topic requires the integration of a relevant Bible passage. Instead, it is more broadly concerned with seeking after and cultivating a clear and accurate view of God's Word and God's world. That requires constantly examining truth claims, asking if God's Word has anything to say about it, whether one is studying math, social studies, physical education, or theology. It is more of a mindset than a series of individual acts. It is not, however, a quick and easy task. It requires significant time and effort. Important topics and issues can easily be overlooked. It requires that teachers commit to a relentless exploration for the relevance of God's Word in all aspects of life and to inviting students to join in that exploration.

How does this relate to the role of technology in Christian schools? Just as God's Word sheds light on our thinking about different disciplines, it also applies to our exploration of the increasingly digital and technological world in which we live. Many messages that young people read and write today do not come in the form of traditional text. They come through text messages, email, hypertext, YouTube

...it is not just technology we use in Christian education. Sometimes it is something that we study across the disciplines.

Begin with a brainstorming session...What topics, issues, ideas, values, beliefs, or truth claims in the lesson (and the accompanying resources) relate to one or more ideas taught in God's Word?

It is a task where one mixes three deep wells of knowledge: knowledge about content...God's Word...and the specific students that one is teaching.

videos, digital images, films, music, and other aspects of digital culture. As such, it is not just technology we use in Christian education. Sometimes it is something that we study across the disciplines.

In math, we examine the ways in which people use technology and media to accurately and deceptively represent statistics and the world of numbers. In social studies and language arts, we not only use video clips and other technologies, but we also find opportunities to think and learn about how ideas can be modified depending on which technology is used. In language arts, we consider the affordances and limitations of communication in different forms and using different technologies. We study digital citizenship, considering how our Christian faith informs our decisions about when and how to use different technologies, whether it be video games, social media, or cell phones. All of this becomes part of the content of the Christian school, giving students a chance to understand how God's Word applies in the digital world.

The SIT Method—Surface, Integrate, Teach

One practical way to employ some of these ideas is to use the SIT method, which is both an acronym and a reminder that this task requires that we slow down, have a seat, and engage in some careful thought, prayer, and study about the various lessons that we teach. This method yields more intentional integration of the faith, even when we are using tools, resources, and curricula that are not explicitly Christian.

Surface

The first step in SIT is to focus on a single lesson plan and its accompanying resources: textbook, other readings, videos, PowerPoint documents, additional educational technologies, or any other resources that may be used by teacher and student. A Bible (or digital equivalent) with a concordance that allows one to quickly and easily find passages related to various topics and keywords, is useful.

Begin with a brainstorming session to record as many answers as possible to the following question: What topics, issues, ideas, values, beliefs, or truth claims in this lesson (and the accompanying resources) relate to one or more ideas taught in God's Word? This is not a simple task, it requires the teacher to have what I call a "deep well" of knowledge about God's Word and about the lesson and resources. The better a teacher knows God's Word and the content in the lesson, the easier this will be. A new teacher will need to devote more time and energy than a more experienced teacher. And experienced public school teachers now teaching in a Christian school may need to challenge themselves to revisit long known lessons, but this time with God's Word open.

This step is not about making up contrived connections with God's Word. It is about surfacing the faith topics and issues that are already present (sometimes subtly, sometimes more obviously) in the lesson, resources, and technologies. It is a task where one mixes three deep wells of knowledge: knowledge about the content, knowledge about God's Word, and knowledge about the specific students that one is teaching.

...integrating , is about refining and focusing one's plans...to prayerfully select one or two items from the surfacing brainstorm and to intentionally plan ways to help students explore that topic alongside other things that student s will learn within a lesson or unit.

"How will I help students explore and learn this faith lesson alongside everything else that I am teaching?"

We cling to the entirety of Christian doctrine as taught in God's Word, not simply as a body of knowledge but as teachings that inform the policies, practices, and culture of our schools.

...we live in a time of unprecedented change, innovation, and experimentation in education...As parents have more educational choices for their children than ever before, Christian schools have the challenge of deciding when, if, and how to explore different models.

Integrate

The surfacing stage is really a form of brainstorming. As a result, one is likely to surface more issues than are wise or possible to teach in a given lesson. Similarly, one will surface topics and issues that are not developmentally appropriate for all audiences. This second stage, integrating, is about refining and focusing one's plans. To *integrate* is to prayerfully select one or two items from the surfacing brainstorm and to intentionally plan ways to help students explore that topic alongside other things that students will learn within a lesson or unit. The idea is to make these one or two ideas integrated and embedded parts of the lesson, and the first step in doing this is to write a learning objective for the identified topic and include it alongside the other stated learning objectives for the lesson. Write it out as a statement that describes what one wants the students to learn related to this faith issue.

Teach

Having brainstormed (surfaced), selected an important topic from the brainstorm, and written a specific learning objective (integrate), the teacher is ready to plan for actually teaching it. Ask, "How will I help students explore and learn this faith lesson alongside everything else that I am teaching?" This comes back to the *design* approach to teaching the faith, as one engages in planning one or more specific and intentional learning activities that will help students grapple with and learn the stated objective. This might include selecting readings from God's Word or other sources, planning thought-provoking discussion questions, bringing in a guest speaker on the topic, having students create a project or product that integrates the faith issue, or almost any other learning activity. This should involve intentionally focusing upon these topics and should be a planned and integrated part of the lesson rather than an "add on" or after thought.

Reimagining Christian Education in a Technological World

Broadening our understanding of the definition of educational technology, careful study of the affordances and limitations of technology, and helping students grapple with the nature of faith, life, and learning in the digital world offer promise for the future of Christian education. This analysis of the technologies of Christian schools helps us distinguish that which is essential, important, and merely present. We gain confidence and clarity about those central tenets of Christian education to which we remain uncompromisingly committed. We cling to the entirety of Christian doctrine as taught in God's Word, not simply as a body of knowledge but as teachings that inform the policies, practices, and culture of our schools.

In spite of that uncompromising foundation, a detailed vision for the nature of Christian schooling is not explicit in the Scriptures or the [Christian Confessions](#). While there are many good and useful texts that communicate potential visions for Christian education in the contemporary world, there remains significant room for different possibilities. Even as some authors and educators advocate for particular approaches to schooling and curricula, we live in a time of unprecedented change, innovation, and experimentation in education. [Homeschooling](#), [virtual schooling](#), and innovative models of [charter schools](#) are among the fastest growing trends in P12 education. As

What will Christian schools of the future look like...We can...help create an answer, but doing so requires persistent prayer and study of God's Word...and the courage to make decisions that are informed...

parents have more educational choices for their children than ever before, Christian schools have the challenge of deciding when, if, and how to explore different models.

Consider this list of educational innovations that gained increased attention and adoption in schools over the last several years: new models of [project-based learning](#) and [game-based learning](#), the [flipped classroom](#) and other forms of [blended learning](#), mobile devices in the classroom, bring your own device schools and other models of 1-to-1 programs, social media and cloud computing, online learning, [massive open online courses](#), [adaptive learning software](#), eBooks and ereaders, [maker spaces](#) in education, the common core state standards, standards-based assessment, rapid advancement in learning analytics technologies, and the open [digital badge](#) initiative that promises to bridge the gap between learning in and outside of school. Newspaper headlines and education literature abound in bold estimates or predictions about how one or more of these will impact the future of education.

What will the schools of the future look like? What will Christian schools of the future look like? How will the role of teacher and student change or stay the same? How will current and emerging educational technologies impact this future? Which aspects of current schools will persist? Which ones will be replaced with alternatives? While we can make predictions, we do not know the answers to these questions. We can, however, help create an answer, but doing so requires persistent prayer and study of God's Word, analysis of the trends and possibilities, persistent conversation about the affordance and limitations of the technologies in our schools, and the courage to make decisions that are informed by these things.

APPENDIX

How do you decide upon an educational product? Do you use a systematic process, go with your gut, choose what is most popular, or perhaps go with suggestions from trusted colleagues? The task of sifting through thousands of options can be overwhelming, even impossible. However, when you do look at a product or narrow down your list, there are resources to help you evaluate it. This is not a five-minute process, but if you are going to make a significant investment and/or make a decision that impacts students and your educational ministry focus, it calls for a deliberate, systematic review. A careful review of educational products is hard work, but our students are worth it. In fact, you could even involve students in using one or more of these tools to help review products.

[9 Questions for Evaluating Educational Innovation](#)

This short document provides a helpful list of important questions to ask when you are evaluating educational products. It is simple but gets at many of the important factors to consider when selecting a product or service.

[The Pearson Efficacy Framework](#)

Pearson Education created a framework for evaluating the efficacy of educational products. This report outlines that process. It is a

lengthy document (56 pages) but worth the time and effort to read. It will give you a robust understanding of which factors to consider when you review educational products.

[The Online Efficacy Tool](#)

This is really just an extension of the previous resource. It is a link to a tool created by Pearson to evaluate educational products. It will take you through the review of a product based upon outcomes, evidence, planning and implementation, and capacity to deliver (the broad categories included in the Pearson Efficacy Framework).

[Conducting and Reporting Product Evaluation Research](#)

Many companies provide “research” to back up the value of their product. This document is a guide for companies on how to conduct such studies of their products. It comes from the Software and Information Industry Association. Reading this will give you a better understanding of how to judge the quality of a research report about a given educational product.

[How to Evaluate Educational Software and Products](#)

This is an older resource (from 2000), but the list of things to consider/review is still excellent. It is a short, two-page resource with a robust list of considerations.

[“Neil Postman and Media Ecology”](#)

This short article introduces you to a series of simple questions that can help surface some of the unexpected consequences of various technologies.

All Scripture quotations are from The Holy Bible, English Standard Version, copyright © 2001 by Crossway Bibles, a division of Good News Publishers. Used by permission. All rights reserved.

Bernard Bull serves as Assistant Vice President of Academics, working mainly with the accelerated learning and continuing and distance education; Associate Professor of Education; and Director of the MS in Education — Educational Technology at Concordia University Wisconsin. He holds a BA in education, history, and theology; and MA in curriculum and instruction; and MLS (liberal studies); an EdD. In instructional technology, and a certificate in distance learning and teaching from the University of Wisconsin—Madison.