

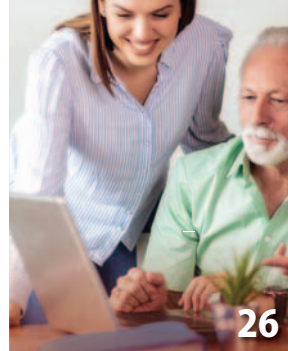
ADVENTIST EDUCATION

TECHNOLOGY
CAREERS
AND FAITH:

CLOSING
THE GREAT
DIVIDE

See page 12





APRIL-JUNE 2019 • VOLUME 81, NO. 2

- 3 Editorial: Beyond the Maze: Principles for Adventist Education in a Changing World**
By Julián Melgosa
- 4 Vaccines: The Power Tool in the Disease-prevention Toolkit**
By Leslie R. Martin and Mikayla C. Conneen
- 12 Technology Careers and Faith: Closing the Great Divide**
By Laurel Dovich
- 18 Preparing Online Students to Engage in Fieldwork Experiences**
By Evelyn Villaflor-Almocera
- 26 Mentoring: An Intervention Program for Non-traditional Students**
By Lorena Neria de Girarte
- 32 Effective Governance: The Legal and Fiduciary Duties of Boards**
By Karnik Doukmetzian and Joseph K. C. Doukmetzian
- 38 Perspectives (Higher Education): Audacity Personified: Leading With Hope, Searching for Truth(s)**
By Ty-Ron M. O. Douglas
- 45 Best Practices at Work: Using Graphic Organizers to Activate Prior Learning in Mathematics**
By Elvis Agard

Photo and art credits: Cover and issue design, Harry Knox; pp. 8, 10, 18, 26, 30, iStock by Getty Images; p. 11, Gevil, ©Ehav Eliyahu, CC BY-SA-3.0/GFDL/Wikimedia Commons, A Free Repository; p. 12, Codex, ©Massimo Pizzocaro, used with permission; p. 13, Guttenberg Press, CC BY 2.0/ Wikimedia Commons, A Free Repository; p. 14, Humpback Stellanwagen, ©Whit Welles, GFDL/Wikimedia Commons, A Free Repository.

The Journal of Adventist Education®, *Adventist*®, and *Seventh-day Adventist*® are the registered trademarks of the General Conference Corporation of Seventh-day Adventists®.

EDITOR
Faith-Ann McGarrell
EDITOR EMERITUS
Beverly J. Robinson-Rumble
ASSOCIATE EDITOR
(INTERNATIONAL EDITION)
Julián M. Melgosa
SENIOR CONSULTANTS
John Wesley Taylor V
Lisa M. Beardsley-Hardy
Geoffrey G. Mwbana, Ella Smith Simmons

CONSULTANTS
GENERAL CONFERENCE
Hudson E. Kibuuka, Mike Mile Lelic,
Julián M. Melgosa

EAST-CENTRAL AFRICA

Andrew Mutero

EURO-ASIA

Ivan Riapolov

INTER-AMERICA

Gamaliel Florez

INTER-EUROPEAN

Marius Munteanu

NORTH AMERICA

Arne Nielsen

NORTHERN ASIA-PACIFIC

Richard A. Saubin

SOUTH AMERICA

Edgard Luz

SOUTH PACIFIC

David McClintock

SOUTHERN AFRICA-INDIAN OCEAN

Mozecie Kadyakapita

SOUTHERN ASIA

Prabhu Das R N

SOUTHERN ASIA-PACIFIC

Lawrence L. Domingo

TRANS-EUROPEAN

Daniel Duda

WEST-CENTRAL AFRICA

Juvenal Balisasa

COPY EDITORS

Randy Hall, Wayne Hall

ART DIRECTION/GRAPHIC DESIGN

Harry Knox

ADVISORY BOARD

John Wesley Taylor V (Chair), Ophelia Barizo, Erlene Burgess, George Egwakhe, Lisa M. Beardsley-Hardy, Paola Franco-Oudri, Hudson E. Kibuuka, Linda Mei Lin Koh, Steve Laing, Mike Mile Lelic, James Martz, James Mbyirukira, Julián M. Melgosa, Arne Nielsen, Constance C. Nwosu, Dragoslava Santrac, Evelyn Sullivan, Carla Thrower

THE JOURNAL OF ADVENTIST EDUCATION publishes articles concerned with a variety of topics pertinent to Adventist education. Opinions expressed by our writers do not necessarily represent the views of the staff or the official position of the Department of Education of the General Conference of Seventh-day Adventists.

THE JOURNAL OF ADVENTIST EDUCATION (ISSN 0021-8480 [print], ISSN 2572-7753 [online]) is published quarterly by the Department of Education, General Conference of Seventh-day Adventists, 12501 Old Columbia Pike, Silver Spring, MD 20904-6600, U.S.A. TELEPHONE: (301) 680-5071; FAX: (301) 622-9627; E-mail: mcgarrell@gc.adventist.org. Address all editorial and advertising correspondence to the Editor. Copyright 2019 General Conference of SDA.



Julián Melgosa

A few years ago, a friend gifted me a book entitled *Who Moved My Cheese?* by Spencer Johnson, MD.¹ The book is a parable about four little characters: two mice and two little people. The first duo acted like mice, and the second, even though they were about the size of mice, acted much like people. All of them lived together in a huge maze and spent most of their days searching for what they wanted the most: cheese. The mice followed simple behaviors: searching for cheese and eating it. The little humans were more ambitious and searched for better and bigger cheese.

Eventually, the little people found an abundant reserve of cheese and thought it would be their source of satisfaction forever. So, they worked less and less and became arrogant because of their success—so much so that they didn't anticipate what was coming. One day, when both the mice and the little people arrived at their cheese station, they were dismayed to discover that there was no more cheese. The mice, realizing that this was a possibility all along, proceeded to search for more cheese. The two little people, however, were angry that someone moved their cheese and found themselves stuck in a cycle of blame and inertia. This parable is about change and our resistance or inability to face it. We may live comfortably for a while without realizing that change is approaching, and it thus catches us unprepared.

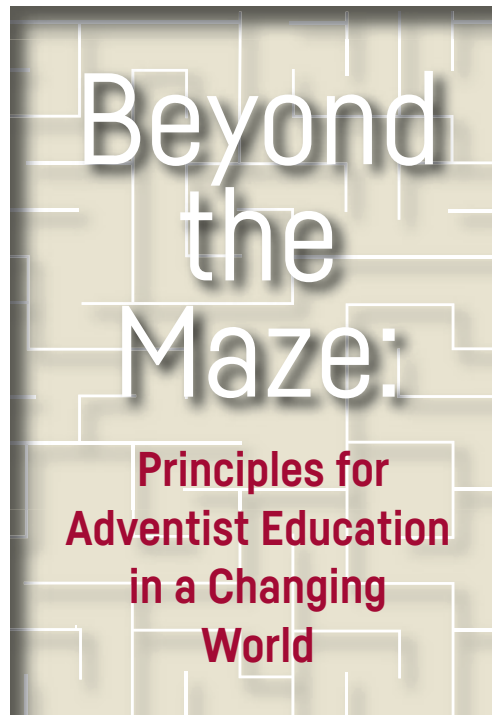
What do we do with change in education? Adventist

education goes back to the 19th century. Can we apply its principles in the 21st century?² I believe the answer is “yes” as long as we hold onto the essential philosophy, do not get bogged down with detail, and are ready to change and adapt. Take, for example, the schools of the prophets. Ellen G. White, the major proponent of Adventist educational ideology, drew basic principles of education from these institutions.

The message that our schools “should become more and more like the schools of the prophets”³ appears repeatedly.⁴ What were the schools of the prophets? These schools prepared individuals for service. In her book *Education*, White explained that these schools were not for future prophets, but for future teachers, those called to instruct the people in the works and ways of God. That is why Samuel, under the Lord's guidance, established these schools to “serve as a barrier against the wide-spreading corruption, to provide for the mental and spiritual welfare of the youth.”⁵ Samuel founded two of these companies, one in Ramah and the other

in Kirjath-jearim. Others were added later.⁶ The Bible calls those who attended these schools “the sons of the prophets” or “the company of the prophets”⁷ over the first few chapters of 2 Kings.

What were the features of the schools of the prophets? First, the core subjects included the Law with a thorough study of the content of the Pentateuch parchment rolls, as revealed directly by God to Moses.



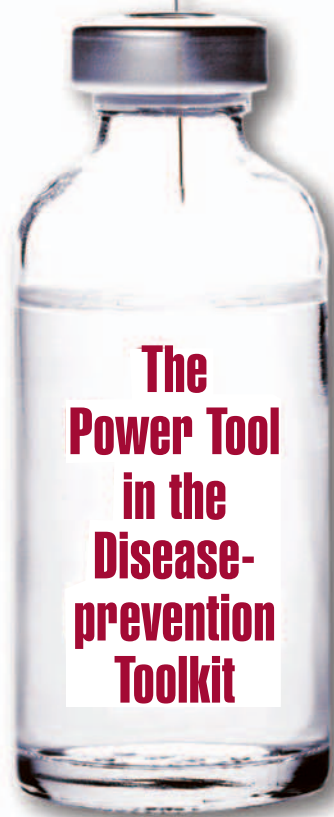
Continued on page 51

VACCINES



Ioana Czegledi was a rosy-cheeked Romanian girl with blond hair who would have been 10 years old in May of 2017. Instead, the previous month, she was wracked with fever, her skin covered with spots, and her body unable to keep food down. Despite the best efforts of her healthcare team, she died of complications from measles.¹ Ioana had been born with medical problems that made it dangerous for her to be vaccinated. Her mother did her best to protect her from exposure to contagious diseases, but because Ioana became badly dehydrated that April, she had to be admitted to the pediatric hospital in nearby Timisoara. It was there that she contracted the disease that so quickly killed her; she was one of at least 59 Romanians who have died since the measles epidemic began in 2016.

Prior to the development of a measles vaccine, which became available in the United States in 1963, it



was estimated that most U.S. children contracted measles by the age of 15, and that somewhere between three and four million individuals in the U.S. were infected annually, resulting in 400 to 500 deaths.² In 2000, the U.S. declared measles eliminated, providing an excellent illustration of the efficacy of vaccines for reducing the **mortality*** and **morbidity*** associated with communicable diseases. Likewise, other diseases have been at least partially controlled by vaccines including diphtheria, whooping cough, and polio—and smallpox has been declared eradicated worldwide.³

Yet despite these apparent success stories, the powerful tool of vaccination has not yet realized its full potential. Ioana's story is just one of many tragic cases, and measles remains a serious health threat in parts of the world today. The World Health Organization estimates that despite an 84 percent decrease in measles deaths between 2000 and 2016, at least seven million people contracted

BY LESLIE R. MARTIN and MIKAYLA C. CONNEEN

measles infections in 2016.⁴ The World Health Organization's tracking of global vaccination coverage also indicates that in the past several years, the proportion of children, worldwide, who have received recommended immunizations has not increased, despite efforts, but has instead remained steady at 85 percent.⁵

Influenza is another communicable disease that, to many, seems unpleasant but not especially dangerous. Thus, despite easy access to annually updated influenza vaccines in many parts of the world, getting immunized isn't a high priority—it's common to hear people say, "I haven't gotten around to it yet, but I need to get it done"; or "I think I'll just skip it this year; I didn't get it last year, and I was fine." The potential danger of this type of thinking is highlighted by the experience of two Texas (U.S.) physicians whose healthy and active son, Leon, died of the flu on Christmas Day in 2017.⁶ He had begun to feel sick just two days earlier, and in less than 48 hours, he was dead. The sad irony is that he was scheduled to receive a flu vaccine on January 3 when his 2-year-old brother would also be receiving needed vaccinations. In an interview, his mother said, "It wasn't even on my radar as something that I really, really needed to prioritize. . . . it just slipped through the cracks." The U.S. Centers for Disease Control and Prevention (CDC) reported that Leon was just one of 180 children killed by the flu during the 2017-2018 season, and that some 80 percent of those children had not been given a flu shot.

Scientific evidence clearly demonstrates that vaccines reduce the mortality and morbidity associated with communicable diseases but, despite the documentation regarding their safety and efficacy, recent *declines* in vaccination rates⁷ have been noted in some areas of the globe. This, in part, explains the ongoing measles threat—we are now seeing resurgences in several diseases such as measles and whooping cough (pertussis) that were previously well-controlled or largely

eradicated.⁸ The erosion of progress against preventable diseases is well illustrated by the fact that 98 countries, from Ukraine to the Philippines, reported more measles cases in 2018 than in 2017.⁹ In some parts of the world, getting necessary vaccines can be difficult. For example, in the midst of Syria's civil war, it has been estimated that at least 400,000 children under the age of 5 have not yet been vaccinated against polio.¹⁰ Internal

The personal beliefs, knowledge, and social norms related to vaccine hesitancy are almost always linked to faulty data which, unfortunately, sometimes come through generally trusted channels (friends and family, religious groups, and social media).

conflicts have also harmed vaccination efforts in places like Nigeria and Pakistan.¹¹ As a result, new cases are being recorded, although only those in eastern Syria have been numerous enough to be labeled an outbreak. Disease outbreaks in the U.S. and Europe are less likely to be due to lack of access and instead largely reflect personal beliefs and misinformation.

Inability to *access* vaccines versus *choice* not to vaccinate—these broad and very different explanations illus-

trate that failure to vaccinate is not a single-solution problem. The reasons that people fail to get recommended vaccines for themselves and their children include religion, resistance to influence of leaders/lobbies (pro-vaccine), objections to government and institutional policies (mandates), personal beliefs, social norms, knowledge/awareness, lack of trust in healthcare providers, schedule/mode of administration, geography, and economics.¹² The personal beliefs, knowledge, and social norms related to **vaccine hesitancy*** are almost always linked to faulty data which, unfortunately, sometimes come through generally trusted channels (friends and family, religious groups, and social media). Perhaps the best example of this is the now infamous paper published by Andrew Wakefield and his colleagues in 1998 that linked the measles, mumps, and rubella (MMR) vaccine to autism.¹³ Subsequent researchers were unable to replicate his findings, and the U.K.'s General Medical Council eventually concluded that Wakefield had acted in a dishonest and irresponsible manner in following data collection and analysis protocols; his medical license was revoked, and the paper was retracted by the *Lancet*, the medical journal that had published it (this means that it is no longer considered to be part of the scientific literature, due to scientific misconduct—specifically, fraud and data misrepresentation). Nevertheless, the false assertions in that paper had already made an impact, and some continue to believe its debunked claims. Addressing immunization gaps due to availability is difficult (requiring resources and investment), but the way to deal with this problem is straightforward. Interventions aimed at changing attitudes and personal beliefs have proved more problematic, however—they have often been ineffective and in some cases have even produced outcomes that were the opposite of those intended.

An example of this reverse effect was described by Nyhan and colleagues¹⁴ whose MMR vaccine study

included a nationally (U.S.) representative group of 1,759 parents. Participants were randomly assigned to interventions that included (1) evidence that the MMR vaccine does not cause autism, (2) information on the dangers of the diseases the MMR vaccine protects against, (3) pictures of children with MMR vaccine-preventable diseases, and (4) a dramatic narrative about an infant who nearly died from measles. All of the interventions failed to increase parents' intentions to vaccinate their children. Providing evidence that the vaccine was not linked to autism successfully reduced erroneous beliefs about such a link but, for parents who held the most negative attitudes about vaccines at the start of the study, intention to vaccinate still decreased despite the fact that their beliefs were now more accurate. This is known as **confirmation bias**.^{*} Further, parents who saw pictures of children with MMR vaccine-preventable diseases expressed greater beliefs about a vaccine-to-autism link afterwards, and those who heard about the infant who nearly died of measles became more convinced that the vaccine itself had serious side effects. These surprising results provide a window on just how challenging it can be to change not only intentions (and their relevant behaviors), but also the underlying beliefs.

But *why* is it so difficult to debunk erroneous beliefs about vaccines? Lewandowsky and colleagues¹⁵ summarize several cognitive processes that are involved in people's acceptance and retention of misinformation. First, misleading information isn't always easy to identify—it can be difficult to know whether the information we encounter is reliable or not. Second, when attempting to make this determination, we weigh new information against what we already believe to be true. Information that doesn't match what we already believe is more difficult to process¹⁶ and also elicits negative feelings,¹⁷ creating a bias against accepting informa-

tion that is incompatible with our existing beliefs. Lewandowsky also notes that coherence of the information (whether it seems to fit together in an organized and reasonable way), whether others in our social groups believe it, and the perceived credibility of the source also contribute to whether it is accepted.

Besides these cognitive factors, an additional problem exists with regard to vaccines—their very success may now be contributing to people's hesitancy regarding them. Taking the U.S. as an example, most vaccine-preventable diseases are at historically low levels, meaning that young parents have never seen the ravages of once-common communicable infections firsthand and thus have less sense of urgency regarding getting their children vaccinated.¹⁸ When this

is added to the cognitive factors already described, it is not surprising that shifting the beliefs, attitudes, and behaviors related to vaccines is a difficult task.

What, then, can be done at the school-level to ensure that students are protected by vaccinations? Schools should have in place policies regarding vaccine requirements that must be met for entrance and continued enrollment for students as well as administrators, teachers, staff, and volunteers who will have contact with students (see Sidebar 1). The literature¹⁹ provides recommendations that, while not guaranteed to eliminate vaccine noncompliance, may be useful in moving individuals toward better adherence to vaccination recommendations. Let's examine these in more detail:

Box 1. Terms*

Confirmation bias – selectively using new evidence to support existing beliefs and prejudices and dismissing information that does not support these ideas. For more, see <https://www.psychologytoday.com/us/blog/science-choice/201504/what-is-confirmation-bias>.

Herd immunity – a population's level of resistance to a contagious disease that is determined by the number of individuals who have been vaccinated and are already immune to the disease. This protects those who are unable to be vaccinated due to age, compromised immune systems, or complications from disease, and helps to retard the spread of the disease. For more, see <https://www.vaccines.gov/basics/work/protection>.

Mortality – relating to death or death rates.

Morbidity – state or rate of disease.

Vaccine hesitancy – beliefs about vaccines that range from uncertainty about their benefits to outright rejection of them despite access to immunization services. Hesitancy grows out of a complex set of factors that can influence individuals and groups to hold certain beliefs about vaccines and demonstrate a lack of confidence in data or complacency toward the need for them. For more information see https://www.who.int/immunization/programmes_systems/vaccine_hesitancy/en/.

*Definitions compiled from the following sources: Shahram Heshmat, "What Is Confirmation Bias?" *Psychology Today* (2015): <https://www.psychologytoday.com/us/blog/science-choice/201504/what-is-confirmation-bias>; U.S. Department of Health and Human Services, "Vaccines Protect Your Community" (2019): <https://www.vaccines.gov/basics/work/protection>; Dictionary.com: <https://www.dictionary.com>; and World Health Organization, "Addressing Vaccine Hesitancy" (September 2018): https://www.who.int/immunization/programmes_systems/vaccine_hesitancy/en/.

Keep good records. Vaccinations need to occur before students are enrolled in school. Check with the state or government department of health Websites for specific guidelines about what is needed prior to enrolling in school (see Box 2). Conduct regular assessments of which vaccinations students at your school have had. Knowing your school's vaccination rates will help to determine whether there is a problem that needs to be addressed (and many countries require schools to keep vaccination records). These records are also useful in the case of a disease outbreak.

Ensure accessibility. In some countries, the socialized healthcare system ensures that vaccinations are accessible to all, but this is not true everywhere. Even so, most vaccines are not prohibitively expensive, but screening to identify and remove existing financial barriers will be helpful. County (or other regional) immunization clinics are one good source for low-cost vaccinations, and urgent-care clinics sometimes contract with schools to provide discounts on required vaccines. Accessibility has been shown to increase the numbers of individuals receiving the vaccine.²⁰

Provide vaccinations on-site. Students need to have obtained certain vaccines before they are allowed to enroll in school. Financial as well as time-related accessibility may be enhanced by making vaccinations available on-site, perhaps by hosting an annual "vaccination day" when a school nurse, delegating nurse (administers medication), physician, or public-health nurse can provide at least some necessary vaccinations for students. These might include HPV (human papilloma virus), influenza, Tdap (tetanus, diphtheria, pertussis), Meningococcal, Hepatitis (A/B), Varicella (chickenpox), MMR (measles, mumps, rubella) or necessary boosters. Establish the expectation that vaccinations will be obtained on this day (make this the default) to encourage parents to have their children participate; more detailed discussions with parents around the topic should follow throughout the school year,

and the guidelines outlined later in this list will help school administrators frame the content of these sessions (see Box 2 for links to Schedules for the Most Commonly

Recommended Immunizations).

Clearly define vaccination requirements. Data show that when nonmedical exemptions are easier to get, disease rates are higher.²¹ Because states or local governments

Sidebar 1. Sample Exclusion Letter for Schools

(To be used for students who were temporarily admitted/retained in school)

Month, Date, Year

Dear *(Parent or Guardian)*:

Students must be vaccinated according to *(Insert state or government requirements)* to attend school.

A review of *(Child's Name)* vaccination record shows that we do not have record of him/her receiving the following vaccination(s):

Please have your child vaccinated and/or provide proof that your child already has received the vaccination(s).

Because *(Child's Name)* was temporarily admitted to school, if you do not provide proof that your child has received the vaccine(s) listed above, he/she will **NOT** be allowed to attend school after *(DATE)*.

Where do I get more information? Where do I get forms?

For more information about immunization requirements, visit *(Insert Weblink to requirements)*

You can reach us at *(Insert telephone contact number)* for help or more information.

Sincerely,

Name of School Representative

(Print name and title of school administrator)

Box 2. Weblinks to Schedules for the Most Commonly Recommended Immunizations

- Children From Birth through 6 Years Old (<https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html>)
- Preteens and Teens (<https://www.cdc.gov/vaccines/schedules/easy-to-read/adolescent-easyread.html>)
- Childhood Vaccine Assessment Tool (<https://www2a.cdc.gov/vaccines/childquiz/>)
- Adult Vaccine Assessment Tool (<https://www2a.cdc.gov/nip/adultimmsched/>)
- WHO Immunization Schedule by Country (http://apps.who.int/immunization_monitoring/globalsummary/schedules)



have various requirements for school enrollment, schools should set policies that make vaccinations the “default option” and make it more difficult for parents to file an exemption with the school. The Seventh-day Adventist Church does not support religious waivers—the denomination’s current guidelines on immunizations can be found at: <http://www.adventist.org/en/information/official-statements/guidelines/article/go/-/immu>

nization (see Box 3). Making exemptions more difficult to obtain can be an effective strategy²² for improving vaccination rates.

Engage in follow-up contacts.

Have a school nurse or other school official make follow-up phone calls to families whose students are not vaccinated and have not been admitted to school (or have been sent home). Sometimes the personal request from a trusted and valued member of the social network can make a difference. Parents will also need to be made

aware of the requirements for their unvaccinated child(ren), should they be exposed to disease or in case an outbreak occurs (e.g., length of time they will need to be kept home from school). Local health departments may have pamphlets or other guidelines for schools on this topic.

Research also shows that having more in-depth discussions with hesitant parents can help improve vaccination rates.²³ During these discus-

sions, the techniques described later in this list can be used.

Ensure consistent messaging. Educate teachers (and other school officials) about the importance of vaccinations, including their efficacy and safety. This will help ensure that misinformation isn't accidentally shared and that clear and consistent messages are provided to parents and students—including the role-modeling of immunization compliance. It may be useful to have occasional articles in the school newspaper or on the school Website about the importance of being up-to-date on vaccinations—this presents a cohesive message from the school's administration. Information should also be included in the health-science curriculum.

Data indicate that when messages across healthcare providers and other trusted authorities are consistent, those messages are more compelling, and adherence is better.²⁴ Parents should consult with their family physician for guidance. The National Association of School Nurses' Statement on Vaccinations is also a good resource: <http://www.nasn.org/advocacy/professional-practice-documents/position-statements/ps-immunizations>.

Don't reinforce myths. When attempting to correct misinformation, it's easy to inadvertently reinforce the very thing you're trying to challenge by repeating it unnecessarily.²⁵ Therefore, emphasize correct information without repeating the misinformation, if possible. If inaccuracies must be addressed, preface the discussion with an explicit warning that *this is false information*. This will encourage people to be mentally vigilant and less likely to be influenced by the misinformation.

Fill the information gap. When fallacies are debunked, this creates a gap in knowledge, which makes it important that this gap be filled with accurate data. Provide correct information about the efficacy and safety of vaccines immediately after misinformation has been discredited. (See Sidebar 2).

Box 3. General Conference of Seventh-day Adventists Official Statement Guidelines on Immunization

"The Seventh-day Adventist Church places strong emphasis on health and well-being. The Adventist health emphasis is based on biblical revelation, the inspired writing of E.G. White (co-founder of the Church), and on peer-reviewed scientific literature. As such, we encourage responsible immunization/vaccination, and have no religious or faith-based reason not to encourage our adherents to responsibly participate in protective and preventive immunization programs. We value the health and safety of the population, which includes the maintenance of 'herd immunity.'

"We are not the conscience of the individual church member, and recognize individual choices. These are exercised by the individual. The choice not to be immunized is not and should not be seen as the dogma nor the doctrine of the Seventh-day Adventist Church."

* General Conference of Seventh-day Adventists Official Statement Guidelines on Immunization (March 2, 2015): <https://www.adventist.org/en/information/official-statements/guidelines/article/go/-/immunization/>.

Sidebar 2. Additional Information on Vaccines and Immunizations

Valuable Resources for Schools

- Centers for Disease Control and Prevention (CDC) (<http://www.cdc.gov/>)
- CDC's Infectious Disease National Centers (<http://www.cdc.gov/ddid/centers.html>)
- CDC International Traveler's Line (1-877-FYITRIP or 1-877-394-8747) (<https://www.nc.cdc.gov/travel>)
- Ethical Issues and Vaccines (<http://www.historyofvaccines.org/index.php/content/articles/ethical-issues-and-vaccines>)
- GAVI – The Global Alliance for Vaccines and Immunizations (http://www.who.int/workforcealliance/members_partners/member_list/gavi/en/)
- Institute for Vaccine Safety—John Hopkins University (<http://www.vaccinesafety.edu/>)
- Parents of Kids with Infectious Diseases (PKIDS) (<http://www.pkids.org/>)
- The Vaccine Page (<http://www.vaccines.com/>)
- World Health Organization Vaccines (<http://www.who.int/topics/vaccines/en/>)
- Patti Herring and Elizabeth Holzhauser, "Important Facts About Immunizations," *The Journal of Adventist Education* 65:3 (February/March 2003): 9-16: <http://circle.adventist.org/files/jae/en/jae200365030908.pdf>

Anti-Vaccination Arguments Schools Might Encounter

- Informed Consent Action Network (<https://www.icandecide.org>)
- A Voice for Choice (<http://avoiceforchoice.org/>)
- ProCon.org (<https://vaccines.procon.org/>)

Keep it simple. Presentations should be brief and straightforward, avoiding jargon and including illustrative materials (such as diagrams or animations) that help to illustrate important concepts. Make sure that the correct information and desired message are more compelling than and at least as easy to remember as the misinformation. In fact, research has consistently shown that making new (and true) information as easy to process as possible, and focusing on it as much as possible (versus focusing on the myth to be debunked) is an effective strategy for correcting erroneous beliefs.²⁶ This can be challenging because misinformation is often fear-based, and human beings tend to pay attention to, and remember, things about which they feel anxious. Clear directives that show people what they can do to address the anxiety-producing situation (e.g., getting a simple vaccine to avoid a dangerous disease) can help mitigate their apprehension.

Support existing worldviews. As much as possible, present information in a way that is consistent with the worldview and values of your audience—this makes linkages to existing knowledge easier and recall more effective.²⁷ With regard to religious practice, this is not generally a problem for Seventh-day Adventists. But people hold many values other than religious values. Some parents may believe, for example, that natural immunity is preferable for their children—even while acknowledging that vaccines are safe and effective. This unlocks the opportunity to introduce other values into the discussion—perhaps the value of caring for our community and the importance of **herd immunity*** for protecting immunocompromised individuals who cannot be immunized for medical reasons.

The HPV (Human Papillomavirus) vaccine is unique because objection to this vaccination is often made on the basis of religious or moral

grounds.²⁸ Particularly in schools (and families) that encourage sexual abstinence prior to marriage, parents may feel that their child doesn't need this vaccination because he or she is not currently sexually active and is not going to engage in promiscuous behavior.

These attitudes reflect a misconception about the vaccine (that it is only necessary if teens and young adults are sexually active) and so reframing in terms of documented long-term risks may be helpful (e.g., the U.S. Centers for Disease Control estimates that every sexually active adult in the U.S. will be infected by HPV at least once in his or her life, and HPV infections account for ~27,000 cancer diagnoses annually including middle throat, cervical, and anal²⁹).

Help people assimilate the information. If information must be presented that is inconsistent with parental values or worldview, provide assistance to help them assimilate it, perhaps by presenting it in a worldview-affirming manner (e.g., focusing on benefits rather than risks or reminding parents of biblical texts such as 1 Corinthians 6:19, “Do you not know that your bodies are temples of the Holy Spirit . . .” (NIV).³⁰ While this text is sometimes used to support arguments against vaccinations, it should be noted that the Bible also admonishes care for one another (Philippians 2:3-4) and recognition of our responsibility toward others (Galatians 5:13).

We are fortunate to have vaccinations as a tool for helping us to control and eradicate the many communicable diseases that have played such a devastating role in human history. Misconceptions about them, and hesitancy to use them, are understandable, but recognizing parental fears does not mean we should accept this state of affairs. The best medical advances are effective only if we use them. As Korean-American physician and anthropologist Jim Yong Kim (former President of Dartmouth, former head of the WHO's HIV/AIDS department, and

president of the World Bank from 2012-2019) said, “The real rocket science in health care is how you organize human beings to actually deliver what we already have....”³¹ We have many effective vaccines. We must use them, and help others to do the same. ✍

This article has been peer reviewed.



Leslie R. Martin, PhD, is a Professor of Psychology at La Sierra University in Riverside, California, U.S.A. She completed her doctorate at the University of California, Riverside, and is a Fellow of the Western Psychological Association. Dr. Martin has authored and co-authored articles in the areas of health psychology, social psychology, and personality.



Mikayla C. Conneen, BA, is a 2019 graduate of La Sierra University in Riverside, California, with a BA in Neuroscience. She plans to begin medical school in 2020 and eventually hopes to specialize in psychiatry. Mikayla's research has focused on incongruities in health behaviors—in particular, vaccine-related behaviors.

Recommended citation:
Leslie R. Martin and Mikayla C. Conneen, “Vaccines: The Power Tool in the Disease-Prevention Toolkit,” *The Journal of Adventist Education* 81:2 (April-June 2019): 4-11.

NOTES AND REFERENCES

1. Joanna Kakissis and Octavian Coman, "The Story Behind the Worst Measles Outbreak in the European Union," *NPR: Weekend Edition Saturday* (November 24, 2018): <https://www.npr.org/sections/goatsandsoda/2018/11/24/669228140/the-story-behind-the-worst-measles-outbreak-in-the-european-union>.
2. The U.S. Centers for Disease Control and Prevention report that between January 1 and June 6, 2019, 1,022 cases of measles have been confirmed in 28 U.S. states (<https://www.cdc.gov/measles/cases-outbreaks.html>). In addition to death, individuals contracting the disease can be subject to hospitalization (48,000 people are hospitalized each year), encephalitis (1,000 suffer from swelling of the brain), and subsequent long-term challenges from the disease such as chronic pneumonia, blindness, and permanent hearing loss. For more information see U.S. Centers for Disease Control and Prevention, "Measles (Rubeola): Measles History" (2018): <http://www.cdc.gov/measles/about/history.html> and "Measles Data and Statistics" (2018): <https://www.cdc.gov/measles/downloads/MeaslesDataAndStatsSlideSet.pdf>.
3. William Muraskin, *The Politics of International Health: The Children's Vaccine Initiative and the Struggle to Develop Vaccines for the Third World* (New York: SUNY Press, 1998).
4. World Health Organization, "Immunization, Vaccines, and Biologicals: Measles" (2018): <http://www.who.int/immunization/diseases/measles/en>.
5. World Health Organization, "Immunization Coverage Fact Sheet" (2018): <https://www.who.int/news-room/factsheets/detail/immunization-coverage>.
6. City News Service, "Doctors' Son Died 10 Days Before Flu Shot Appointment" (2018): <https://fox5sandiego.com/2018/11/02/doctors-son-died-10-days-before-flu-shot-appointment/>.
7. Abraham Palache et al., "Seasonal Influenza Vaccine Dose Distribution in 157 Countries (2004–2011)," *Vaccine* 32:48 (December 2014): 6,369-6,376; Anna Pearce et al., "Millennium Cohort Study Child Health Group. Factors Associated With Uptake of Measles, Mumps, and Rubella Vaccine (MMR) and Use of Single Antigen Vaccines in a Contemporary UK Cohort: Prospective Cohort Study," *The BMJ* 336:7647 (February 2008), 754-757.
8. Vincent A. A. Jansen et al., "Measles Outbreaks in a Population With Declining Vaccine Uptake," *Science* 301:5634 (August 2003): 804; Varun K. Phadke et al., "Association Between Vaccine Refusal and Vaccine-preventable Diseases in the United States: A Review of Measles and Pertussis," *JAMA* 315:11 (March 2016): 1,149-1,158; Jessica E. Atwell and Daniel A. Salmon, "Pertussis Resurgence and Vaccine Uptake: Implications for Reducing Vaccine Hesitancy," *Pediatrics* 134:3 (September 2014): 602-604; James D. Cherry, "Epidemic Pertussis in 2012—The Resurgence of a Vaccine-preventable Disease," *New England Journal of Medicine* 367:9 (August 2012): 785-787.
9. WHO-UNICEF, "Estimates of DTP3 Coverage. Vaccine-preventable Diseases: Monitoring System 2018 Global Summary" (2018): http://apps.who.int/immunization_monitoring/globalsummary/time-series/tswucoveredtp3.html.
10. Darin L. Seehafer, "Polio Outbreaks in Syria: Impact of War on Public Health," *PRA Health Sciences* (2017): <https://prahealthsciences.com/blog/2017/08/14/polio-outbreaks-in-syria/>.
11. Ibid.; Stephanie Soucheray, "Syria, Pakistan Report New Polio Cases," Center for Infectious Disease Research and Policy (2017): <http://www.cidrap.umn.edu/news-perspective/2017/07/syria-pakistan-report-new-polio-cases>.
12. Eve Dubé et al., "Mapping Vaccine Hesitancy—Country-specific Characteristics of a Global Phenomenon," *Vaccine* 32:49 (November 2014): 6649-6654.
13. Andrew J. Wakefield et al., "RETRACTED: Ileal-lymphoid-nodular Hyperplasia, Non-specific Colitis, and Pervasive Developmental Disorder in Children," *The Lancet* 351:9103 (February 1998): 637-641.
14. Brendan Nyhan et al., "Effective Messages in Vaccine Promotion: A Randomized Trial," *Pediatrics* 133:4 (April 2014): e835-e842.
15. Stephan Lewandowsky, et al., "Misinformation and Its Correction: Continued Influence and Successful Debiasing," *Psychological Science in the Public Interest* 13:3 (September 2012): 106-131.
16. Piotr Winkielman et al., "Fluency of Consistency: When Thoughts Fit Nicely and Flow Smoothly." In Bertram Gawronski and Fritz Strack, eds., *Cognitive Consistency: A Fundamental Principle in Social Cognition* (New York: Guilford Press, 2012), 89-111.
17. Leon Festinger, *A Theory of Cognitive Dissonance* (Evanston, Ill.: Stanford University Press, 1957).
18. Erick Temoka, "Becoming a Vaccine Champion: Evidence-based Interventions to Address the Challenges of Vaccination," *South Dakota Journal of Medicine* (February 2013): Spec. No.: 68-72.
19. Lewandowsky et al., "Misinformation and Its Correction: Continued Influence and Successful Debiasing"; Noella W. Whelan et al., "Engaging Parents and Schools Improves Uptake of the Human Papillomavirus (HPV) Vaccine: Examining the Role of the Public Health Nurse," *Vaccine* 32:36 (August 2014): 4665-4671; Centers for Disease Control and Prevention, "Improving Vaccination Coverage Fact Sheet" (2015): <https://www.cdc.gov/vaccines/imz.managers/laws/downloads/Improving-Vax-Coverage-Factsheet.pdf>; C. Lee Ventola, "Immunization in the United States: Recommendations, Barriers, and Measures to Improve Compliance. Part 1: Childhood Vaccinations," *Pharmacy and Therapeutics* 41:7 (July 2016): 426-436; Patti Herring and Elizabeth Holzhauser, "Important Facts About Immunizations," *The Journal of Adventist Education* 65:3 (February/March 2003): 9-16.
20. Kerrie E. Wiley et al., "Uptake of Influenza Vaccine by Pregnant Women: A Cross-sectional Survey," *Medical Journal of Australia* 198:7 (April 2013): 373-375.
21. Eileen Wang et al., "Nonmedical Exemptions From School Immunization Requirements: A Systematic Review," *American Journal of Public Health* 104:11 (November 2014): e62-e84.
22. Douglas J. Opel and Saad B. Omer, "Measles, Mandates, and Making Vaccination the Default Option," *JAMA Pediatrics* 169:4 (April 2015): 303, 304.
23. Y. Tony Yang and Ross D. Silverman, "Legislative Prescriptions for Controlling Nonmedical Vaccine Exemptions," *JAMA Viewpoint* 313:3 (January 2015): 247-248.
24. M. Robin DiMatteo, "Variations in Patients' Adherence to Medical Recommendations: A Quantitative Review of 50 Years of Research," *Medical Care* 42:3 (March 2004): 200-209.
25. Norbert Schwarz, Eryn Newman, and William Leach, "Making the Truth Stick and the Myths Fade: Lessons From Cognitive Psychology," *Behavioral Science and Policy* 2:1 (January 2016): 85-95.
26. Ibid.
27. Esther S. Grassian and Joan R. Kaplowitz, *Information Literacy Instruction: Theory and Practice*, 2nd ed. (New York: Neal-Schuman Publishers, Inc., 2001).
28. Nancy C. Sharts-Hopko, "Issues in Pediatric Immunization," *MCN: The American Journal of Maternal/Child Nursing* 34:2 (March-April 2009): 80-88.
29. My Southern Health, "Should Teens Get the HPV Vaccine?" (2018): <http://www.mysouthernhealth.com/hpv-vaccine-teens/>.
30. 1 Corinthians 6:19. *New International Version* (NIV). Holy Bible, *New International Version*®, NIV® Copyright © 1973, 1978, 1984, 2011 by Biblica, Inc.® Used by permission. All rights reserved worldwide.
31. Ivy Mungcal, "Who Is Jim Yong Kim?" (2012): <https://www.devex.com/news/who-is-jim-yong-kim-77825>.

TECHNOLOGY CAREERS AND FAITH:

CLOSING THE GREAT DIVIDE

Technology careers and their preparatory education are typically classified as “secular.” They aren’t favorably compared with the “spiritual calling” of pastors, Bible workers, or teachers—which carry the aura of having the ability to spiritually influence others. Technology careers aren’t classified as “helping vocations,” such as medical occupations, social work, and emergency-response occupations—which fit well into the Christian dogma of service. They aren’t trapped in the limelight of religious debates about evolution, appropriate literature (fiction vs. non-fiction), or business ethics,¹ nor are they typically associated with challenges to one’s faith. Are technical vocations not legitimate occupations for “divine calling”? Do they actually have a faith connection?

As Adventist Christians, we have never been anti-technology like the Amish. We see biblical precedence in use of technology—ranging from fashioning tools (Genesis 4:22, Isaiah 2:4) to God’s direct instructions to build an ark (Gen-

esis 6:14-16) to God’s use of human-built technology as a place to dwell among us (Exodus 25:8) to Christ’s use of buildings for illustrations (Matthew 7:24-27, Luke 13:4; 14:28-30). It seems clear that God intended for us to make and use tools—which is within the scope of technology careers. However, throughout my Adventist education (elementary, academy, and university), technology-related courses were never tied to a religious experience. They were taught as secular subjects with no affiliation to our Christian faith.

While it could be argued that the basis of technological design is the laws of physics and mathematics, which God created and holds constant, I would argue that technology careers have far more connectedness to our faith than has generally been perceived, and we should be spiritually mentoring our students in these fields. But how do we bridge the apparent gap between technology careers and faith?

A literature review in my area of technology (engineering) shows instructors using mission and service projects or

BY LAUREL DOVICH

external required reading to integrate faith into their classrooms. However, I believe the personal testimony of the teacher's heartfelt spiritual connection to his or her occupation closes the apparent gap between technology careers and faith at a personal level for the students, and conveys that spiritual connection is not just what you do, but also who you are. To that end, I have used narratives in three categories to convey the correlation I've made between *my* faith and *my* career. The first is the narrative of the biblical holy calling of technologists. Second, the narrative of how God's holy Word was carried to us through the ages by vessels of human technology. And finally, the narrative of God's creative engineering designs, observed in nature, being "very good" (Genesis 1:31, NRSV).²

The Narrative of the Biblical Holy Calling of Technologists

The holy calling of work in technology starts in the Creation account in the Bible, where God created humankind in His own image. It is also reflected by the calling and ordination God imparted to the craftsmen (technologists) who built the tabernacle.

The Creation Account indicates that God created humans in His own image (Genesis 1:26, 27)—that is, to be creative beings. Designing and creating technology is a reflection of what God created us to be—creative. Working in technology is a reflection of our Creator's image, a holy calling, and should be presented as such in Christian education.

Also included in the Creation account is the dominion mandate—God's instruction for human beings to subdue and have dominion over the Earth (Genesis 1:28). The creation of technological devices consumes a great deal of Earth's natural resources, and the vast majority of technological designs cater to the richest 10 percent of the world's population.³ The ethics of the impact of technology development is a rich topic for classroom discussions with respect to God's call for social and environmental responsibility in dominating the Earth.

God's Calling and Ordination of the Craftsmen of the Tabernacle (Exodus 31:1-6; 35:20-36:1) highlight the fact that

these professions are spiritually honorable. God "called" Bezalel by name to the work of building the tabernacle and filled him with the ability to do every sort of work done by a craftsman or by a designer (Exodus 35:31-34) and "inspired him to teach" (35:34), which provides biblical precedent for a spiritual calling to technology careers and technology educators. God extended His ordination to all the craftsmen of the tabernacle, filling them "with the Spirit of God, with ability and intelligence, with knowledge and all craftsmanship" (Exodus 31:3). Although the tabernacle was designed by God, He entrusted human beings to use their God-given ability, intelligence, and knowledge to develop the technology to accomplish the task at hand. I can extrapolate from this that all who work in technology do so with the God-given gifts of ability, intelligence, and knowledge. And we are exhorted, as the tabernacle engineers were, to "work in accordance with all the Lord has commanded" (Exodus 36:1; Ecclesiastes 9:10; 1 Corinthians 10:31; Colossians 3:23, 24), ordaining our career as a calling of service to God. This record in Scripture is packed with fodder for classroom discussions to close the gap with faith.



A 200-year-old Yemenite Sefer Torah on Gevil. Photo by Ehav Eliyahu©. CC BY-SA-3.0/GFDL, Wikimedia Commons, A Free Repository.

Narrative of God's Word Being Entrusted to Human Technology

The Bible is the basis of Christianity, and God entrusted His sacred Word to human technicians and human technology to preserve, protect, reproduce, and disseminate it. The biblical account started out as oral tradition until technology was able to provide writing surfaces, appropriate inks, and application

methods to transfer it to a written record.⁴ God's Word was so precious to early Christians that they guarded it with their lives, and it was so precious to some Christian technologists that they developed technologies to propagate and disseminate it.

According to Jewish tradition, the first books of the Bible were recorded by Moses on gevil and formed into a scroll.⁵ Gevil, made from tanned, unsplit animal hide, was a product of technology and a writing surface used in Egypt at the time. Iron sulfate powder incorporated in the ink reacted

with tannic acid from the hide preparation to give a pure black tint that adhered well.

Other early biblical manuscripts were written on papyri, a plant-based writing surface, on which Egypt had a monopoly, since the papyrus plant grew only along the Nile delta. The outer layer of the stalk of the papyrus plant was stripped off, leaving a sticky, fibrous inner pith that was sliced longitudinally into thin strips. The strips were laid in two perpendicular layers on a hard surface and hammered together while moist, then dried under pressure. The dried sheets were polished and rubbed with cedar wood oil to make a smooth writing surface capable of readily taking ink. Sheets were cut to size and glued together with a flour paste, matching the grain direction, to form a scroll. Scribes would

process than gevil. Parchment production was a slow, physically demanding, time-sensitive, complicated process, making parchment an expensive commodity. It is believed that the parchment process was refined in Pergamon between 250 and 150 B.C. when Egypt temporarily stopped exporting papyrus. Parchment was used into the age of printing; however, it wasn't until the fourth century A.D. that its use became more common than papyrus.

When Constantine adopted Christianity in the fourth century, the peril of destruction of sacred texts was over, and reproduction of the Bible was sanctioned by the state. Costly parchments were used, new ink from iron salts, tannins, and resin were developed, as well as the quill pen. Through the Middle Ages, Christians are credited with developments

in the production of quality parchments, pigments, and inks, as scribes painstakingly hand-copied biblical manuscripts.⁶ Illuminated manuscripts from this time period included shading and decorative work in the written characters, lovely colors, ornamentation, small pictures, and gold leaf. The beauty of these artfully adorned medieval manuscripts reflects the high value ascribed to the Bible, and the passion for giving God the best that craftsmanship could supply.

Early Christians are credited with championing the most momentous technological development in the dissemination of knowledge before the printing press—the shift from the scroll form of manuscript to a codex form of binding. The codex is a collection of sheets of flexible writing material, papyrus, or parchment, folded double and fastened together at the back or spine. It was usually protected by wooden covers, and in the case of parchment, a clasp was used to clamp the codex shut between the wood covers so the parchment wouldn't buckle due to changes in humidity.

The codex form had many advantages over the scroll. It was economical, since both sides of the writing surface were used, rather than the single side for scrolls. It provided enhanced accessibility—texts were easier to find and compare within a larger manuscript. The codex was also more compact—it could be held in one hand and was easier to transport and conceal.

For Christians, the adoption of the codex form was immediate. Almost all the early Christian manuscripts that have survived, the earliest dated to the second century A.D., are in codex form. However, the prevalence suggests that codex use must have started even earlier. For secular writ-



Codex. Photo by Massimo Pizzocaro©. Used with permission.

write on the side that had the horizontal grain pattern, giving them a natural straight-line writing guide.

Ink for the papyrus was made from berries, plants, and minerals, and was applied by a reed brush made from hollow, tubular stems of marsh grasses. A blunt tip was cut on one end and slit multiple times to fashion a fine-pointed brush. The hollow reed was filled with ink, which was forced to the brush tip by squeezing the reed.

Papyrus was used from 2000 B.C. through the 12th century A.D. Although the expected lifetime of papyrus was 30 years, ancient papyri have been found in Egypt and the Judean desert, preserved by the dry arid climate. Papyrus fragments of the Jewish Old Testament have been found dating to the second century B.C.

The next progression for a biblical writing surface was parchment, which was more durable than papyrus. Parchment was made from animal skins using a more refined

ings, however, the shift was a very slow, irreversible drift. In the first and second centuries A.D., the scroll was considered the proper form of books for polite society. In the third century, the codex was eventually given legal equality with the scroll in estate settlements,⁷ but it wasn't until the fifth century that 90 percent of non-Christian manuscripts were in codex form.⁸

Timothy Stanley⁹ proposes that the reason Christians almost universally adopted the codex, counterculturally, was that this technology allowed them to bind together more texts than was feasible with the scroll, giving their scriptures a unifying effect. The four parallel narratives of the Gospels could be bound together rather than separated into four scrolls. Paul's letters could be bound together in one codex, and these non-narratives were better consulted in the random-access form of the codex. The codex allowed for a collected sacred literature for the early Christians, a technology promoting theological unity.

The preciousness of God's Word once again spurred on technology in 1450 when Johannes Gutenberg developed a movable type press in order to print the Bible. Gutenberg adapted wine-press technology, combining it with his own inventions of casting metal movable-type letters and an oil-based ink that would stick to the metal. In 1620, Gutenberg's press was regarded as having had the biggest effect of any invention, equaled only by gunpowder and the compass, and the number of books 50 years after the invention of the press was equal to 1,000 years of European scribes' work.¹⁰

Gutenberg printed Bibles between 1450 and 1455, producing around 200 copies, some on parchment and some on paper, a much cheaper and easily made plant-pulp writing surface. Gutenberg then ran out of money, and his press was repossessed by his creditor, who wasn't interested in printing Bibles. Only 21 known complete copies of the Gutenberg Bible have survived.¹¹ They are considered to be the most valuable books in the world, assessed individually at \$25 to \$35 million.¹²

Technology has continued to change the face of our Bible. We now have the Bible in audio form,

searchable Internet Bibles in many versions and languages, and smartphone Bibles. Cutting-edge biblical technology is now being created to read ancient manuscripts—powerful imaging tools to read scrolls that are too fragile to unroll and to recover writing too faint to see.¹³ God's precious Word has been carried to us through the ages by human technology and which continues to participate in biblical preservation and dissemination.

The Narrative of God's Engineering Designs Being "Very Good"

God is the original engineer, the Master Designer of the world and all its habitation. Despite the Fall and the taint of sin and decay, nature still gives us insights into God's well-thought-out, inquisitively complex, optimized designs.



Recreated Gutenberg press at the International Printing Museum in Carson, California. CC BY 2.0, Wikimedia Commons, A Free Repository.

Nature accomplishes feats that engineers can only dream of, attracting the attention of a wide range of researchers and scientists who have produced a veritable avalanche of studies into nature's incredibly refined processes for development of better technologies. This area of research and the resulting innovative technology is called Bioinspired, Bionic, Biomimicry, or Biomimetics. This study of nature, through technological eyes, gives us insight into the awe-inspiring, exquisite, and elegant designs of God, the Master Engineer.

Biotechnology research covers such a broad range of nature and technological applications that only a small overview can be presented here—snippets extracted from several categories. Simple Internet searches will provide a



Humpback Whale showing tubercles on leading edge of pectoral fin. Photo by Whit Welles©. GFDL, Wikimedia Commons, A Free Repository.

variety of magnificent details relating to the examples listed and a treasure trove of more bioinspired designs. For Christians, these examples are windows into God's ingenious, intricate designs, thought out to the minutest detail.

Natural Materials: Natural materials are so superior to manmade materials that researchers have focused a lot of time on trying to synthesize them. Scientists have sought to replicate spider silk and abalone shell nacre because of their incredible structural properties, but controlling material properties at the small scale of the abalone shell and mastering the colossal genetic sequencing of spider silk have eluded them so far.¹⁴ The medical need for wet environment adhesives has turned researchers to nature for inspiration. Human beings have created some impressive adhesives, but none of them works in wet environments. Research in this area started with mussels, which adhere their shells to underwater surfaces, and has expanded to

caddisfly larvae and sandcastle marine worms, which fashion protective cases from small pieces of available materials.¹⁵

Animal Mobility: For all the progress engineers have made in robotics, mobility remains an issue in locations where wheels don't work well—areas with rough terrain and obstacles. Once again, researchers and engineers look to nature to solve some of these difficulties. Boston Dynamics is the leader in developing complex feedback systems to maintain robotic balance for walking mobility. It developed a mule robot that can traverse some rough terrain, a humanoid that flails its appendages to maintain balance when jostled, and a four-legged cheetah robot with a flexible spine to allow a high-speed gallop. Festo, a German-based manufacturing company with a division dedicated to bioinspired designs, is a leader in robotic flight. They spent years deciphering bird flight in order to create their SmartBird, which flies using wing flaps rather than propellers. Although years of development have been invested in mobility and balance, all these robots are limited by battery life or tethered by power cords, and operation of the mule robot was too loud for the clandestine military movements it was designed to assist.

Forms for Aerodynamics: The aerodynamic forms in nature have proved far superior to the human understanding of fluid dynamics. However, some innovations in natural products have been borrowed by humans. The flexible layers of small teeth on shark skin have been mimicked to give better aerodynamic properties to jets, boats, and swimsuits.¹⁶ These products were so successful that the boat

coatings were banned from competitive sailing in 1987, and Speedo's sharkskin swimsuits were banned after the 2008 Olympics. More recently, scientists took a closer look at the counterintuitive bumps on the leading edge of humpback whale flippers.¹⁷ Compared to smooth fins, the bumpy humpback fins had 30 percent less drag and eight percent more lift, making them extremely dexterous and aquabatic for their size. Whalepower is developing bumpy leading-edge blades for turbines, pumps, and fans that are 20 percent more efficient than traditional blades.

Forms for Functions: Copying forms found in nature to accomplish a task or function is one of the oldest forms of biomimicry. Velcro was developed in 1955, inspired by the small hooks seen under magnification on prickly seed burrs that stick to clothes and animals.¹⁸ The air ventilation system in the Eastgate Center, an office and shopping complex in Zimbabwe, was fashioned after the self-cooling mounds of

African termites. Its passive cooling system uses 90 percent less energy than air-conditioning systems in similar-sized neighboring buildings.¹⁹ Inspired by the Namib Desert beetle, which harvests water from morning fog, utilizing the surface structure on its back,²⁰ the Dew Bank prototype has synthesized these surface features to deliver a glass of water from desert air.

Manufacturing: Modern manufacturing typically involves energy-intensive high pressure and temperatures, piles of waste, and lots of toxic byproducts. God designed nature to create all its products at normal temperature, pressure, and pH, out of biodegradable, water-based materials. They don't use fossil fuels, nor do they pollute the planet. There is a drive to find manufacturing techniques that are more environmentally friendly, similar to nature's assembly processes. Angela Belcher at MIT has used viruses to create a battery.²¹ She manipulated the virus DNA so inorganics and nanotubes bind to its outer coat, creating the positive and negative electrodes. This is just a start to a long journey of trying to manufacture with the same environmentalism that God designed nature to exhibit.

Final Thoughts

Our Christian faith has strong ties to technology. God ordained technical careers when He designed us to be creative, when He called Bezalel and ordained the tabernacle craftsmen. God entrusted human technologists and human technology to create a place where He could dwell among us, and He entrusted human technologists and human technology to preserve and disseminate His Word—the basis of our faith. God has also given us inspiration for technical development within His carefully, exquisitely created world.

Let's be diligent in our God-given careers, following in His creative footsteps. Let's ask for the same ordination as the temple craftsmen. Take on the name *Bezalel* when you approach your trade—whether you be a designer or a teacher. Let us treasure the technology that brought our Bible to us, and marvel at the thought and care God put into the design of our world. And once it becomes a part of our own life story, let us bring the heart-felt narratives of this connectedness to our Christian faith intentionally into our technology-based classrooms. ✍

This article has been peer reviewed.



Laurel Dovich, PhD, PE, is a structural engineer specializing in seismic concrete design and retrofit. She has inspected seismic disasters around the world and has been awarded fellow status in her professional society. Dr. Dovich is also an active member of the Christian Engineering Society. For 15 years she served as a professor of engineering at Walla Walla University (College Place, Washington, U.S.A.) where she earned three teaching

awards; and, in 2016, Walla Walla presented her with the Alumna of the Year award. Currently, Dr. Dovich teaches part-time as an adjunct professor at Gonzaga University, Eastern Washington University, University of Idaho, and Walla Walla University. This paper was presented while mentoring technology faculty during a Biblical Foundations Conference at Montemorelos University, Mexico.

Recommended citation:

Laurel Dovich, "Technology Careers and Faith: Closing the Great Divide," *The Journal of Adventist Education* 81:2 (April-June 2019): 12-17.

NOTES AND REFERENCES

1. Technology careers do have ethical challenges related to war, social and environmental justice, and product safety, but they're rarely talked about.
2. All Scripture texts in this article are quoted from the *New Revised Standard Version* of the Bible. *New Revised Standard Version Bible*, copyright © 1989 the Division of Christian Education of the National Council of the Churches of Christ in the United States of America. Used by permission. All rights reserved.
3. Cynthia E. Smith, National Design Museum, Smithsonian Institution, *Design for the Other 90 Percent* (New York: Assouline Publishing, 2007), 19, 133.
4. There are many books on the formation of the Bible that include the technology used.
5. Moses Maimonides, *Mishneh Torah: Sefer Ahavah*, Eliyahu Touger, trans. (Israel: Moznaim Publishing Corp., 2010), Tefillin 1:8 and commentary: http://www.chabad.org/library/article_cdo/aid/925417/jewish/Chapter-One.htm.
6. Colin Henderson Roberts and Theodore Cressy Skeat, *The Birth of the Codex* (London: The British Academy by The Oxford University Press, 1987), 32.
7. Ibid.
8. Ibid., 37.
9. Timothy Stanley, "Faithful Codex: A Theological Account of Early Christian Books," *The Heythrop Journal* 57:1 (2016): 17, 18.
10. Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brains* (New York: W. W. Norton, 2010), 69.
11. "Gutenberg Bible," *Wikipedia*: http://en.wikipedia.org/wiki/Gutenberg_Bible.
12. Philipp Harper, "In the Book World, the Rarest of the Rare," *NBC Today* (December 13, 2004): <http://www.today.com/id/6124643>.
13. Robert Draper, "The Bible Hunters," *National Geographic* 234:6 (2018): 61.
14. Peter Forbes, *The Gecko's Foot: Bio-Inspiration—Engineering New Materials From Nature* (New York: W. W. Norton, 2006), 55-78; 139-142.
15. Henry Fountain, "Studying Sea Life for a Glue That Mends People," *New York Times* (April 12, 2010): <https://www.nytimes.com/2010/04/13/science/13adhesive.html>.
16. Jay Harman, *The Shark's Paintbrush: Biomimicry and How Nature Is Inspiring Innovation* (Ashland, Ore.: White Cloud Press, 2013), 86-94.
17. Harman, *The Shark's Paintbrush*, 97-102.
18. Forbes, *The Gecko's Foot*, 92-95.
19. Harman, *The Shark's Paintbrush*, 150.
20. Forbes, *The Gecko's Foot*, 50.
21. Anne Trafton, "New Virus-Built Battery Could Power Cars, Electronic Devices," *MIT News* (April 2, 2009): <http://news.mit.edu/2009/virus-battery-0402>.



Fieldwork was one of the teaching methods of Jesus Christ. After teaching His disciples basic principles, He sent them to distant places to do their work and apply what they had learned from Him (Matthew 28:16-20; John 20:21). Fieldwork reinforces the lessons learned in the classroom and applies them to the real world. In online education, fieldwork is becoming more common as curricular requirements are adapted to address the needs of online students.

Preparing students to engage in field experiences online can be challenging since the teacher is not physically present to supervise and assess students' performance. As a teacher

Preparing Online Students to Engage in Fieldwork Experiences

of several face-to-face courses with fieldwork components, I initially found it difficult to imagine how fieldwork requirements could be included in my graduate-level online courses. Several questions had to be considered: Is fieldwork feasible in online education? Will the process be the same as that used for tradi-

tional face-to-face methods? How will I prepare for this? What responsibilities will the students have? How will I know if the students are really doing the work in the absence of my physical supervision? This article provides responses to these questions gleaned from my personal experiences and those of others who have incorporated fieldwork into online courses.

Fieldwork Defined

Fieldwork, or field experience, is any work students complete outside the classroom that enables them to implement and practice what they learned as theory. This may involve collecting data (primary or survey

BY EVELYN VILLAFLORES-ALMOCERA

data, observations, etc.) or performing practical tasks for educational and research purposes in the student's field of study.¹ Hvenegaard notes that "Most instructors incorporate fieldwork to help students understand theory, develop skills, integrate knowledge, build tacit knowledge, develop meaning in places, and work with peers and instructors in alternate settings."²

The Advantages of Fieldwork

As a health educator, I have found that learning theories alone are not enough to help students in health education or public health courses fully grasp concepts, theories, and strategies on how to improve health and quality of life. When students apply knowledge learned in the classroom in real-life settings, they better understand these concepts. This is where fieldwork becomes important as a teaching strategy. For students in online programs that require fieldwork, this experience enables them to immerse themselves in the community, where they can gain firsthand experience in conducting research, analyzing results, and developing and implementing appropriate strategies.³

While there are many benefits to fieldwork, unfortunately, in many cases, according to Ulovec et al.,⁴ fieldwork can have legal implications, and for this reason, some online programs choose not to include it in the curriculum; those that do, proceed with caution. McKenzie, Neiger, and Thackeray⁵ warned that it is necessary to give attention to safety concerns and risk of liability among participants when conducting fieldwork or implementing an intervention program. Failure to do so could lead to fines and legal penalties that tarnish the reputation of the school, discredit the program, and expose the teacher, student, and the school to litigation. Some safety concerns include harm caused to participants resulting from the program intervention or negligence by the program planner. To avoid this, online program administrators, course instructors, and supervisors at the various fieldwork locations

must work closely with students to ensure that safety checks and informed consent are part of the planning and implementation process, and that foreseeable risks are considered.

Uniqueness of Online Fieldwork

Yet, despite these liabilities, many online programs successfully engage students in fieldwork. Lisa Richardson⁶ interviewed the directors of two large, fully online Master of Social Work programs that serve national and international students regarding fieldwork practices at their institutions. Both schools have thousands of students in their full-time online programs.

Both interviewees said that the fieldwork component involved more rigor than the face-to-face program offered on campus. The two schools had different ways of preparing students for fieldwork. Hornsby's school partnered with a company that identified agencies where students could do fieldwork. The partner company interviewed the prospective agency, assessed the available learning opportunities, and contracted with potential field instructors. After necessary information was gathered, it was given to the program faculty for review, and if the sites were approved, students were then placed with various agencies. Gray, on the other hand, said that students in their program found their own place for fieldwork. The faculty only provided an orientation on how to find a suitable agency or community facility in which to work, along with a letter of endorsement. Both schools communicated with their students through Skype, phone calls, or e-mails.⁷

Compared to these and other schools where fieldwork is a full-time course requirement for a program (30 hours a week of participation for 12 to 16 weeks), in my classes, it is just one of the course requirements. Hence, actual fieldwork in my class is short-term (about 10 hours a week for approximately three to five weeks).

Advantages of Online Fieldwork Activity

My fieldwork class does not have a partner agency that coordinates the placement process; instead, students select the area or facility where they will conduct their fieldwork. Students begin the process by identifying and visiting possible facilities or community agencies in their local communities as early as the second week of the online course. They are then asked to submit a list of possible fieldwork site locations, after which I (the instructor) review and provide input regarding the appropriateness of the selections and how well the services provided align with course goals. Most of my students choose to work in places close to their workplace or home. Some advantages and disadvantages of doing fieldwork using this approach include the following:

1. **Location.** Most students are able to do fieldwork in a place that is familiar to them, either in their hometown or at their workplace. Doing fieldwork in a setting where one has social and emotional connections is often more relevant than working in an unfamiliar place. Baker and Härtel⁸ observed that sometimes failure to understand the culture or history of a place can affect how people interact with one another. Having a knowledge of the people in a place before entering their space is essential.⁹ An established relationship makes working together easier. This approach works for my course; however, students need skills that will enable them to work in any environment, not just those that are familiar or close to home or work. For this reason, program administrators and instructors can encourage students to pursue fieldwork experiences in a variety of environments, both the familiar and unfamiliar, since they will need these skills when they enter the workplace.

2. **Cultural competence.** When students conduct their fieldwork in a familiar place, they are better able to communicate with their target popu-

lation since they know the culture as well as the language. Failure to interact with the population being served in the learning experience can lead to failure and misunderstanding of the purpose of conducting the fieldwork. The period of time that my students are engaged in fieldwork is short compared to other programs where it is a full-time requirement, and building cultural competence takes time. This can be a disadvantage; however, during the short period of time, whether working in their own communities or in environments that are unfamiliar, students should seek to learn as much as possible about their fieldwork location to increase their understanding of the needs, assess potential safety concerns, and build cultural competence. This can be done through research (reading up on the area; studying demographic and population data), engaging in conversations with facility administrators or supervisors about social and cultural values within the community, and talking with participants.

3. Community responsiveness. Knowing the culture and language gives students the privilege of easily gathering people together and receiving better responses since they know more about the people with whom they are working. Regardless of how well the student knows or understands the culture or the dynamics of the fieldwork location, the potential for misunderstanding exists. Students should be aware of this potential and be encouraged to work closely with their facility and agency administrators.

The Challenges

There is a limited body of literature available on how to address the challenges of doing fieldwork online. I discovered that both the teachers and the students experience difficulties in implementing this process. Box 1 contains several common challenges that occur in online fieldwork

Box 1. Online Fieldwork Challenges Faced by Teachers and Students Teacher Challenges

Teacher Challenges

1. *Verifying the site.* The teacher must not rely only on the information that the student provides.
2. *Assigning the role of partner agency.* This entails a lot of paperwork involving how the partnership will operate in order to provide educationally sound implementation of skills and knowledge learned in the classroom.
3. *Monitoring and assessing student work.* This is especially problematic when there is no partner agency.
4. *Choosing technology tools* to use in submitting documents.

Student Challenges

1. *Time.* Online students generally work full time and have the responsibility to care for their families.¹ Despite the flexible nature of the online class, these students have limited amounts of time to invest in doing fieldwork. Further, procrastination can be a big challenge. Postponing or delaying the initiation of fieldwork is common. Students will often need to rearrange their schedules so that they can meet their fieldwork appointments.
2. *Access to technology and Internet connections.* Since most of the instruction and communication in online classes are through e-mail, Skype (or other video-conferencing platform), or the Learning Management System (LMS) forum, students must have adequate Internet and computer access. They must also be computer literate and able to use technology properly.² Whether communicating with the instructor and peers or submitting documents and fieldwork assignments, students need to be able to access the Internet and connect online.
3. *Lack of self-motivation.* Poor motivation³ is a contributing cause of the high dropout rate for online courses. This also applies to fieldwork. Hartnett states that “motivated learners are more likely to undertake challenging activities, to be actively engaged, to enjoy and adopt a deep approach to learning, and to exhibit enhanced performance, persistence, and creativity.”⁴ Maintaining high levels of motivation is essential for students to succeed in the online environment, but for some this can be a challenge. Although online students spend a greater amount of time working independently, especially with fieldwork, they often must rely on their own initiative with less supervision than a traditional classroom setting. This can contribute to diminished motivation.⁵

REFERENCES

1. Wiley Education, “Four Key Considerations for Online Programs With Fieldwork Requirements”: <https://edservices.wiley.com/framework-for-online-fieldwork-requirements/>.
2. T. T. Nguyen, “Online or Not Online: Into the 21st Century Education” (2010): http://www.itdl.org/journal/nov_10/article04.htm.
3. Lin Y. Muilenburg and Zane L. Berge, “Student Barriers to Online Learning: A Factor Analytic Study,” *Distance Education* 26:1 (January 2007): 29-48. doi: 10.1080/01587910500081269.
4. Maggie Hartnett, *Motivation in Online Education* (Berlin, Germany: Springer, 2016).
5. Bruce W. Tuckman, “The Effect of Motivational Scaffolding on Procrastinators’ Distance Learning Outcomes,” *Computers and Education* 49:2 (September 2007): 414-422.

experiences. These are best addressed with careful preparation and planning on the part of the teacher.

Teacher Preparation for Fieldwork

Hobgood,¹⁰ along with Hornsby and Gray,¹¹ note that preparing online courses requires more planning on the part of the instructor than what is necessary for traditional face-to-face classes. Successful fieldwork experiences likewise require preparation by the teacher. Here are some ways a teacher may prepare:

1. *Set up clear objectives.* Hvene-gaard suggested that objectives for fieldwork assignments should be clearly stated, and goals should align with course outcomes. He added that “too many objectives can dilute the experience and leave students frustrated.”¹²

2. *Provide clear instructions and expectations.* Clear expectations not only help students make decisions about how to begin the assignment, they also empower them to do their best in completing the assignment and help prevent confusion and misunderstandings, which may lead to poor performance and low grades.

3. *Choose a site.* This can be done through partner agencies or by letting the students choose their own site. Based on experience, although I allow students to select the location for their fieldwork, I still require them to identify several potential places or agencies. They then prioritize this list and give reasons for their choice. As the teacher, I reserve the right to approve or reject proposed sites. Approved sites have clearly stated goals that align with course goals; are supervised by facility administrators (whether hospitals, community centers, government agencies, churches, or schools); have safety and risk protocols in place; and can accommodate the student for the required period.

4. *Clarify to the students the ethical, safety, and legal issues* involved in conducting fieldwork. The course instructor must ensure that fieldwork locations have guidelines for ethical practice and safety. Resource materi-

als such as handbooks or policy manuals can serve as verification that policies are in place. Orientation or training sessions can serve as proof that these are communicated to everyone who works at the site. Students should be able to provide a signed acknowledgement of the protocols. In addition to what is communicated at the fieldwork site, course instructors must discuss ethical, safety, and legal issues with students. Since students will be collecting data, making videos, and im-

Supervisors at the fieldwork site should know what kind of oversight they are to provide during the fieldwork period, and how to communicate with the course instructor if the requirements are not being met or if there is a problem.

plementing strategies, they should be aware of the school’s policies for gathering information and obtaining consent to use other people’s information. Teachers should consult with the school’s legal counsel if unsure of what to include when talking with students about legal issues.

5. *Prepare an endorsement letter* for the student to present to the agency/facility. This letter introduces the student to the site administration and should include the

name of the school, the student, and the teacher, along with the teacher’s e-mail address and other contact information for inquiries related to the student’s work. Likewise, it should contain the purpose of the fieldwork, what the student intends to do, beginning and ending dates, and the teacher’s expectations of the student. In return, the facility administrator should be required to approve or reject the request in writing, and address this to the teacher.

6. *Establish communication protocols.* Course instructors and site supervisors must decide how they will communicate regarding a student’s progress. From conducting virtual site visits to communicating with site supervisors, protocols should be firmly in place. Supervisors at the fieldwork site should know what kind of oversight they are to provide during the fieldwork period, and how to communicate with the course instructor if the requirements are not being met or if there is a problem. Some may choose to provide weekly, signed progress reports, copies of which can be uploaded to the college’s Learning Management System (LMS). Course instructors and site supervisors can also schedule virtual site visits through video conferencing or communicate through e-mail. These interactions should be stored as documentation of the student’s progress. Students must also be informed how they can communicate with the teacher in case issues arise. Communication may be through e-mail, video conference, or LMS discussion forum.

7. *Provide clear assessment tools.* Prepare a tool (rubric) to measure performance expectations for field experience. This tool must be explained to and understood by the students. An assessment rubric can be helpful to the teacher because it provides a clear, objective criteria for evaluation and reduces the chances of grading bias. The rubric should be constantly updated. Course instructors should also provide site supervi-

sors with not only copies of the rubric, but also project guidelines and a final project assessment rubric. (See Table 1 for a sample of my fieldwork rubric.)

8. *Provide feedback within a reasonable time.* Feedback is critical for online classes, as it can help make students enthusiastic about accomplishing their tasks and active in class interaction. It also assures them that the teacher is there to provide guidance. Feedback in online education can be provided in a variety of ways, such as e-mails, video conferences/chats through platforms such as

Skype or FaceTime, or LMS forum discussions.

9. *Prepare documentation and submission guidelines.* Clearly specify how students should document and submit fieldwork activity. This could include preparing templates, forms, and form letters and making them accessible to students. Submission guidelines should include where, when, and how to submit documents. Specific submission folders can be created on the LMS system.

10. *Prepare a certificate of completion* to be signed by the person who is directly involved in supervising the student's work. For example, if the

student completes fieldwork at a school facility, the principal or the classroom teacher could sign the certificate; or, if the student works at a local health clinic, the administrator or shift supervisor could sign. The certificate should include the time, dates of involvement, and the activities or program implemented.

Preparing Online Students for Fieldwork

A successful and enjoyable fieldwork experience not only depends on teacher preparation but also on students taking responsibility for their

Table 1. Sample Fieldwork Rubric

Points	3	2	1
Objectives/Goals	Exceptional	Good	Needs Improvement
Meeting requirements on time	Student not only meets all requirements and responsibilities related to the field experience, but also submits exemplary quality work.	Student has met all requirements and responsibilities related to the field experience on time, but the quality of work does not show satisfactory time involvement.	Student needs to be constantly reminded to perform tasks related to the field experience, and often fails to submit requirements on time.
Commitment to conducting fieldwork	Student communicates strong dedication and commitment to make the experience successful.	Student has made an effort to accomplish the task.	There is little or no evidence that the student is sincerely committed to conducting fieldwork.
Analytical/critical thinking skills	Student carefully analyzes the gathered information and chooses appropriate strategies to address the issues.	Student carefully analyzes gathered information but has no plan, or an inadequate one, for choosing strategies.	Student has completed minimal evaluation of data and has expended minimal effort in planning strategies.
Planning and instruction	Student's lesson plan has clear goals and objectives, and proposed strategies are scientifically valid and easy to implement.	Student's lesson plan has adequate goals and objectives, but the strategies will be somewhat difficult or impractical to implement.	Student's lesson plan is inadequate (lacks clear and meaningful learning goals and objectives) and uses inappropriate or inadequate strategies.
Portfolio	Submitted on time with all documents complete.	Submitted on time but lacks one or more of the required documents.	Submitted all documents but incomplete and/or late.
TOTAL SCORE (Maximum 15)			

learning. Students must take an active role and be accountable for the quality of their fieldwork. The teacher should discuss with the students their role in achieving success in fieldwork.

1. *Develop time-management skills.* Students should avoid procrastinating to prevent being overwhelmed toward the end of the course. They need to start looking for a target population as early as possible, make a timeline, and follow it consistently.

2. *Become knowledgeable about technology.* Students must know exactly what kind of technological support they need and equip themselves. They should know how to use technology to document fieldwork and submit their assignments. Access to high bandwidth or a strong Internet connection to communicate with the teacher and classmates is essential. Students should also be aware that technical issues will arise and be prepared to address them. While the college or university can make technical support available to online students, students will still need to have the ability to solve technical problems. For example, one of the biggest concerns among my students is submission of video clips through free video sites such as YouTube, which have video length restrictions. YouTube allows the upload of videos with lengths that do not exceed 15 minutes. Therefore, students need to be conscious about the file size and length of the videos they submit. They should be able to edit, cut, and minimize the size of their video files.

3. *Learn to collaborate.* Although online fieldwork may seem to be an independent task, students must learn how to effectively collaborate with the agency or facility with which they are working.

4. *Secure a student identification card.* The student must obtain an identification card from the school registrar (in our set-up, from the online division secretary who processes it). The personal identification card shows that students are enrolled in the school and gives access to online

campus resources, such as the main school library.

5. *In collaboration with the site supervisor, assess safety risks.* Since students work in areas that are some distance from the school and course instructor, site supervisors must help students identify safety risks and conduct a risk assessment in the area where they plan to conduct fieldwork. Together, they should identify who will be at risk, identify potential hazards, and create a safety plan that includes actions that can be taken by the student, site supervisor, or course instructor to help minimize or eliminate the risks. Emergency contact information for the students, site supervisor, and course instructor, as well as the program administrators for both the school and fieldwork site, should be included, along with verification of insurance information for both the school and the fieldwork site.

6. *Explore and address ethical issues* before engaging in an activity in each facility. Since online fieldwork in my context means working in an environment that is not under the direct supervision of the teacher, the students are responsible to know and comply with the rules of the facility that dictate ethical practices. Most fieldwork sites conduct an orientation, either one-on-one or with a group, for individuals new to the facility. If this is the case, a signed compliance document verifying the student's knowledge of the facility's rules can be uploaded to the LMS. Just like those in traditional face-to-face classes, students in online classes must follow the "do no harm" policy. They must behave in a manner that does not damage the reputation of the school they represent or endanger themselves or others (see Box 2). Since the nature of the fieldwork that I require involves human subjects, students are also required to acknowledge the dignity of the person who participates and to maintain confidentiality of the information gathered. Students are taught that

human subjects are children of God and for this reason, every care should be taken to protect and preserve their dignity. Additionally, if participants are minors, parental permission will be needed. Each country/state will have specific guidelines for conducting risk assessments, protecting minors, and disclosing how information will be used. Course instructors must consult with the school's legal representative to ensure that what is being required will not endanger students or cause them to be involved in lawsuits.

7. *Be aware of legal liabilities* and use good judgment when setting up programs. Students should be re-

Box 2. Helpful Resources

- "Four Key Considerations for Online Programs With Fieldwork Requirements": <https://edservices.wiley.com/framework-for-online-fieldwork-requirements/>
- "Ten Disadvantages of Online Courses": <https://www.montgomerycollege.edu/academics/online-learning/distance/advantages-and-disadvantages-online-courses.html>
- "Field Learning in Online Social Work Programs," *Field Educator* 2:1 (Spring 2012 Conversations): <http://fieldeduca.tor.simmons.edu/article/field-learning-in-online-social-work-programs/>

quired to find certified professionals if their fieldwork demands professional assistance or special skills. These individuals should be vetted by the course instructor and site administrator. Students must make sure that the implementation plan has been approved by both the program director and the fieldwork site, and that participants sign informed-consent forms before implementation takes place. For more on informed consent, see resources provided by Adventist Risk

Table 2. Steps and Tools for Organizing Fieldwork Experiences for Online Students in a Health-education Class

Dividing the fieldwork component of my course into distinct sections and using a variety of tools has helped me facilitate my online students' work. Below are several steps and tools that can be used to help online students successfully complete their fieldwork assessments.

1. Search for a suitable target population. Encourage students to identify a target population early in the course (within the first two weeks). Students can implement programs at schools, hospitals, clinics, churches, or similar facilities. Starting early to think about their target population will enable them to be more focused about creating implementation plans.

2. Secure a fieldwork site. Teachers must be prepared to provide oversight and suggestions during this stage. Some students will not know where to begin, so a list of possible site locations, based on previous courses, will be helpful. To assist online students in securing a fieldwork site, provide individualized endorsement letters they can take to the lead administrator of the facility or community agency where they intend to work. For example, if students work with a school, the teacher can address the letter to the principal.

3. Assess needs. A community-needs assessment is crucial in planning fieldwork activities. Provide students with methods of identifying, analyzing, and prioritizing the needs of the population they have selected.¹ For health-education programs, health issues in the community should be given priority, especially those that can be addressed with appropriate program planning. A good needs assessment helps to ensure appropriate intervention. If time allows, students may validate the data gathered to determine whether they really reflect the actual needs or the felt needs and prioritize accordingly. Many online resources include information on how to conduct a needs assessment.

4. Determine priorities. After identifying the needs of the target population, students are ready to set up their goals and objectives. The needs assessment may uncover several needs within the community, so students will need to decide which ones need immediate attention and whether enough resources are available to address the issue(s). At this point, students can create criteria to serve as a guide in prioritizing needs from the most urgent to the least urgent. Students must consult with the teacher and the site administrator by e-mail, Skype, or video chat during this decision-making period and before finalizing their plans.

5. Identify intervention strategies. Choose the best strategy to address the issue(s) based on the goals and objectives of the course. Students must consult with the teacher and the administrator/supervisor of the fieldwork site to make sure that the intervention is practical, appropriate, and clearly aligned with the goals of the course, as well as the available time and resources. Each intervention strategy has its own weaknesses and strengths.

6. Document implementation. Timmreck stated that "implementation is the most critical part of the planning process; a plan that is not implemented is no plan at all."² Since teachers in a distance-learning class cannot be physically present at the various fieldwork sites, they will need to use technology to conduct virtual interactions. For example, with permission from the fieldwork site and program participants, students should document as many activities as possible using video recordings or photographs of the activity and live video streaming through FaceTime. These can provide much detail. Factors such as lighting and audio clarity must be considered to ensure that the video is comprehensible.

7. Submit documents showing completion of the assignment. The teacher should require students to submit a portfolio documenting the fieldwork experience. Most often, the portfolio will include all the documents related to the fieldwork, including short reflections on what the student learned during the experience, and a certificate of completion signed by the fieldwork site administrator or supervisor. This can be submitted in an assigned forum or directly to the teacher through e-mail attachments.

8. Debrief. Once the fieldwork experience is completed, students must be provided with an opportunity to unpack their experiences through debriefing exercises. This should include exit interviews with the course instructor and site administrator or supervisor. Ideally, debriefing sessions should take place throughout the experience, with a formal, documented debriefing occurring at the end of the experience.

REFERENCES

1. James F. McKenzie, Brad L. Neiger, and Rosemary Thackeray, *Planning, Implementing, and Evaluating Health Promotion Programs: A Primer*, 6th ed. (New York: Pearson, 2017).
2. Thomas C. Timmreck, *Planning, Program Development, and Evaluation* (Boston, Mass.: Jones & Bartlett, 2003), 171.

Management: <https://adventistrisk.org/en-us/safety-resources/solutions-newsletter/why-are-consent-to-treatment-forms-important> and Loma Linda University: <https://researchaffairs.llu.edu/responsible-research/human-studies/guidelines-for-informed-consent>.

8. *Be aware of and work toward the fieldwork activity assessment.* Providing the assessment rubric prior to beginning fieldwork helps students identify the teacher's expectations and allows them to measure their own progress. (See Table 1.)

Together, teacher and students can work toward making the fieldwork experience a valuable one. Table 2 provides a summary of seven steps that helped me and can assist other teachers in supporting students as they navigate the implementation process.

Summary

Despite the advantages of fieldwork online, there are challenges as well. Finding a suitable location with appropriate supervision, conducting virtual site visits and communicating with site supervisors, navigating informed-consent protocols, learning to manage time despite the flexibility of online education, and maintaining enthusiasm are some of the challenges students face. Technology may also pose a problem to both teacher and students. Teacher preparation is often more complicated and time-consuming than instruction in a traditional classroom, and observing student work when the teacher is physically absent is also a challenge, even with the use of live video recordings or live streaming. Yet, even with these challenges, fieldwork can be done in online courses as long as both the teacher and the student have access

to a computer with an uninterrupted high-speed Internet access and cooperative support from the participating facilities and community agencies. Working together, course instructors, site supervisors, and students can address the challenges and ensure a successful field experience. ✍

This article has been peer reviewed.



Evelyn Villaflor-Almocera, MPH, MD, is an Associate Professor in the Master of Public Health (MPH) Department of the Adventist International Institute of Advanced Studies (AIAS) in Silang, Cavite, Philippines. She earned her MPH from AIAS and her medical degree from the Matias H. Aznar Memorial College of Medicine (Southwestern University) in Cebu City, Philippines. She has been teaching online classes with fieldwork components since 2006. Dr. Villaflor-Almocera authored the book *Healthy Foods, Healthy Lives*, which was published in 2017 by the Philippine Publishing House, and has written several articles for the *Health and Home Magazine*.

Recommended citation:

Evelyn Villaflor-Almocera, "Authentic Online Assessments (Fieldwork)," *The Journal of Adventist Education* 81:2 (April-June 2019): 18-25.

NOTES AND REFERENCES

1. Andreas Ulovec et al., "Fieldwork as a Teaching Method—A Case Study Using GPS." A presentation to DynaMAT on September 25, 2013, at Constantine the Philosopher University in Nitra, Slovakia: C:/Users/AIIAS/Downloads/DYNAMAT_Scientia%20iuvenis_Book%20of%20Scientific%20Papers_2013-2%20(2).pdf.

2. Glen T. Hvenegaard, "Making the Most

of Fieldwork Learning Experiences" (August 7, 2012): <https://www.facultyfocus.com/articles/curriculum-development/making-the-most-of-fieldwork-learning-experiences/>.

3. Tim Hall, Mick Healey, and Margaret Harrison, "Fieldwork and Disabled Students: Discourses of Exclusion and Inclusion," *Transactions of the Institute of British Geographers* 27:2 (June 2002): 213-231.

4. Ulovec et al., "Fieldwork as a Teaching Method—A Case Study Using GPS."

5. James F. McKenzie, Brad L. Neiger, and Rosemary Thackeray, *Planning, Implementing, and Evaluating Health Promotion Programs: A Primer*, 6th ed. (New York: Pearson, 2017).

6. Lisa M. Richardson interviewed Betsey Gray, field director at the University of New England School of Social Work, and Elizabeth Pringle-Hornsby, national field coordinator of the Virtual Academic Center at the University of Southern California School of Social Work. See Lisa M. Richardson, "Field Learning in Online Social Work Programs," *The Field Educator* 2:1 (April 2012): <http://fieldeducator.simmons.edu/article/field-learning-in-online-social-work-programs/>.

7. Ibid.

8. Sunita Barker and Charmine E. J. Härtel, "Intercultural Service Encounters: An Exploratory Study of Customer Experiences," *Cross Cultural Management* 11:1 (March 2004): 3-14.

9. Ronald L. Braithwaite et al., "Community Organization and Development for Health Promotion Within an Urban Black Community: A Conceptual Model," *Health Education* 20:5 (December 1989): 56-60.

10. Bobby Hobgood, "Becoming an Online Teacher," *International Association for Distance Learning*: <http://www.iadl.org/uk/Aricle31.htm>.

11. Richardson, "Field Learning in Online Social Work Programs."

12. Hvenegaard, "Making the Most of Fieldwork Learning Experiences," para. 3.



In the past few years, universities have enrolled an increasing number of non-traditional students.¹ Such students do not have a fixed set of characteristics,² as criteria used to identify them may vary depending on the country and context.³ However, they do share a few common characteristics: Non-traditional students are at least 24 years old, financially independent, have one or more dependents, work full time, and study part time.⁴

• Non-traditional students also have unique needs related to character traits. Vu et al.⁵ suggest that these students are characterized by their ability to take part in self-directed learning, and are more independent, autonomous, self-sufficient, and goal-oriented. These authors also suggest that non-traditional students

- have unique learning needs since their schedules vary greatly;
- have had a variety of life and work experiences;
- can learn better when new knowledge is integrated with

An Intervention Program for Non-traditional Students

real-life contexts; and

- show a strong determination to solve important problems in their lives.

Online education is an attractive option for non-traditional students since it offers greater accessibility and flexibility in academic load and schedules and can be more readily adapted to meet their needs. Research seems to suggest that non-traditional students show a significantly greater preference for the flexibility and convenience of online courses.⁶

The profile of university students, in general, has changed in the past few years, as options in course delivery methods have expanded. The question is, are institutions of higher learning adopting *effective* strategies to ensure that non-traditional students stay enrolled and succeed in online programs?

Mentoring as an Intervention Process

Tinto⁷ claims that a student's decision to stay in a university program depends on his or her ability to integrate and

BY LORENA NERIA de GIRARTE

adapt to the school, as well as to the ability of the school to adapt to the needs of the student, whether traditional or non-traditional.

Likewise, Forbus, Newbold, and Mehta⁸ suggest that colleges and universities must adapt to the needs of non-traditional students to improve these students' satisfaction with and involvement in the university experience. This will help the university ensure that these students persist until they reach their academic goals.

Several research studies have highlighted the essential role of mentoring programs to target the needs of the various types of students enrolling in university courses to ensure their ongoing enrollment and academic success.⁹

Tierney, Corwin, and Colyar¹⁰ observed that students who receive care through mentoring programs tend to show greater focus and motivation to reach their academic goals. Mentoring programs also impact students' ability to persist¹¹ and help to foster their academic success. These programs also have positive effects on their professional performance after graduation.¹²

In their role as mentors, teachers—in addition to effectively fulfilling their duties related to instruction and upholding the reputation of the school—must take into account the greater good of students as individuals. They must also consider the duties life will impose on the students, the service that will be required of them, and the training they will need. Christian educators believe this influence will extend and strengthen to the end of time.¹³ Mentors who through their lives and daily interactions with students model Christian principles, can help draw them toward Christ, stirring within them a desire to walk with Him, even while still in school. Thus, mentors who develop strong relationships of trust and goodwill with their students can more significantly and powerfully influence them in their roles as guides, supervisors, counsellors, role models, and advisors.¹⁴

Characteristics of Effective Mentoring Models

Given that well-designed mentoring programs can impact student retention and program completion, colleges and universities can take several steps to ensure that faculty are trained to provide good support to non-traditional students. Below are characteristics of student-oriented mentoring programs for non-traditional students online.

1. Addresses students' specific needs

Mentoring models, according to Soto et al.,¹⁵ must be developed to address students' specific needs, which can vary according to their age, level of proficiency when starting their studies, previous formative experiences, their motivations and personal expectations, as well as their approach to studying and organizing their schedule, their use of technological resources, and their ability to adapt to the demands of non-traditional teaching models. Additionally, since they are adults, they will frequently face the challenge of balancing work and family responsibilities.

2. Supports wholistic development within a functional structure

A mentoring model must nurture and support students'

wholistic development, personalize instruction, and direct students toward personal maturity as well as promote intellectual growth.¹⁶ In a mentoring model for Seventh-day Adventist schools, wholistic development includes the whole person, since education is “. . . the harmonious development of the physical, the mental, and the spiritual powers. It prepares the student for the joy of service in this world and for the higher joy of wider service in the world to come.”¹⁷

Currently, it is possible to find mentoring models designed for specific audiences and purposes, such as mentoring models for Latinos, distance-education students, women, and first-year students, as well as models that seek to facilitate college entry. All of them share essential elements that help to ensure their effectiveness.

From these models, it is possible to incorporate essential elements into a successful mentoring program, such as (a) identifying the profile of students targeted; (b) developing specific goals; (c) identifying interaction strategies used successfully by other programs; (d) making the strategies operational; (e) developing appropriate training for every participant; (f) choosing methods for regular assessment; and (g) ensuring that the organizational structure follows the strategy.¹⁸

3. Prepares mentors for systematic and intentional implementation

The effectiveness of a mentoring program depends on the skills of the mentors and the degree to which they seek to identify and meet students' needs. The profile for a successful mentor includes (a) the ability to express qualities such as empathy, authenticity, maturity, responsibility, and sociability; and (b) possession of organizational and planning skills (coordination, motivation, and evaluation, as well as technical and educational psychology expertise).¹⁹

Mentors must develop strong relationships of trust and goodwill with learners in order to enhance their mentees' professional development. They should model commitment, efficiency, and enthusiasm, since in each interaction they have the opportunity to exert a significant influence on the learners' development.²⁰

To achieve optimal results, mentors must keep in mind the development of the relationship; the exchange of information and the setting of goals; the work directed to reach stated goals and deepen commitment to completion; and the ongoing assessment of the formal mentoring relationship, along with planning for the future.²¹

4. Provides opportunities for assessing model development and implementation

The effectiveness of a mentoring model becomes clear only after its development and implementation. Sánchez García et al.²² suggest that assessment of a mentoring model should take into account three dimensions: (1) context assessment (whether the model fulfills the students' needs); (2) process assessment (the quality of interactions and exchanges, as well as the participants' satisfaction with the activities, resources, and specific experiences); and (3) product assessment (how well the program affected participants' mo-

tivation, fulfilled their expectations, and benefitted them).

Case Study: Virtual UM Comprehensive Mentoring Program

Mentoring models require concerted efforts to launch, organize, and maintain. Defining a local model that can cater to the specific needs of the school demands a structured approach. Montemorelos University in Nuevo Leon, Mexico, underwent this process when developing the Virtual UM Comprehensive Mentoring Program (Virtual UM). The development process discussed below may be useful for other schools as they seek to develop their own programs. See Box 1 for discussion on the best practices followed in developing the program.

Background Information

Montemorelos University's online education unit, Virtual UM, includes totally online academic courses and offers four undergraduate degrees: theology, business administration, public accountancy, and music. There are five graduate programs: an MBA with concentration in finance or human resources; a Master's in family counseling; and a Master of Education (MEd) with concentrations in educational administration or teaching. It also includes a wide range of continuing-education courses in health, education, management, family, and evangelism.

One hundred percent of students currently enrolled in Virtual UM can be described as non-traditional. Thus, to support their learning experience and wholistic development, the school constructed and implemented a specific mentoring model. The model is based on the eight steps suggested by the Applied Statistics Association (ASA) community.

Virtual UM Mentoring Model

1. *Purpose of the model.* The model is designed to provide a frame of reference that informs tutoring efforts in order to aid the students' academic, personal, professional, and career development. Wholistic learn-

Box 1. Best Practices for an Online Teaching Model Mentoring Program

1. *Define the Scope of the Mentoring Program.* Every school should define the scope and goal of its mentoring program. Effective strategies must focus in academic, personal, professional, and career development.²³ For example, academic mentoring should focus on providing students with support and direction regarding issues related to learning.²⁴ In relation to the students' personal growth and development, the mentor's actions provide support to develop abilities such as time management, self-efficacy, communication, leadership, and a sense of personal purpose.²⁵ Career mentoring helps students develop skills such as collaboration and an in-depth understanding of the work ethic needed in a professional context.²⁶

2. *Train the Team of Teachers Involved in the Mentoring Program.* As more non-traditional students enroll in online programs, changes must be made in the way instruction is delivered. This requires training and engagement of teachers who facilitate online courses.²⁷ Research suggests that the quality, frequency, and duration of the training provided to teachers and auxiliary staff serving as mentors lead to greater involvement and support of institutional strategies, and greater satisfaction in the mentor-student relationship.²⁸

3. *Define an Operational Model.* Mentoring must become one of the central elements in the students' learning experience. Schools need to be committed to designing and implementing mentoring programs that provide wholistic intervention. Wholistic programs that support students' needs increase the likelihood that they will stay enrolled at the school; these programs also improve their professional performance once they leave school.²⁹

The American Statistical Association (ASA) community, a group of scholars involved in research on mentoring, suggests an eight-step guide to create and maintain a mentoring model: (1) define the purpose of the mentoring model; (2) form a mentoring committee; (3) create the model structure; (4) recruit participants; (5) connect mentors and mentees; (6) guide participants, keeping communication open between them; (7) request participant feedback; and (8) assess outcomes.³⁰ These elements should be included in each model.

Table 1. Description of UM Wholistic Learning Experience

A Wholistic Learning Experience	Program Values
	Awareness of the need for well-being and positive quality of life
	Research for ongoing improvements, developments, and innovation
	Ability to persevere, sustained over time
	Preparation to fulfill one's life mission
	Commitment to selfless service
	Advent hope for a brand-new world

ing is the goal of this program and it is expected that learning experiences will help participants achieve this goal (see Table 1).

2. *Mentoring Program Committee.* Within the Virtual UM organizational structure, the Coordination Office of Tutoring and Student Services is responsible for the program’s operation and implementation.

3. *Model Structure.* The Virtual UM mentoring model includes four sections: (a) the model participants; (b) definitions of the scope covered by the model; (c) an outline of actions involved in its operation; and (d) a description of how to integrate faith into the tutoring model. Participants in the model include students, academic tutors, mentors, and the Tutoring and Student Services Coordination office (See Table 2). The model is designed to address four dimensions:

tion. The goal of this dimension is to motivate students at the beginning of the course, keep their interest, and make sure that they finish on time. Mentors are encouraged to create environments that facilitate trust environments through communicating a personal interest in the students and providing spiritual support. The ultimate goal is to foster more effective learning through self-regulation and communication.

The professional and career-development dimension seeks to help students understand work in its professional context and to develop a strong work ethic. This is accomplished through interactive learning, active participation, and collaboration in video conferences, topical discussion forums, question-and-answer forums, and online chapels.

Faith integration occurs throughout the entire process.

Table 2. Virtual UM Participants in a Mentoring Model

Roles in the Mentoring Model			
Student	Academic Tutor	Mentor	Tutoring and Student Services Coordination
Acquires skill in applying learning techniques	Instructor who is an expert in his or her field	UM support faculty or staff	Support and follow-up team for the mentoring model
Builds knowledge based on his or her learning experiences	Facilitator in the various aspects of tutoring	Facilitator in the personal-development dimension	Provides guidance, support, and follow-up to participants
Integrates his or her learning experiences	A tutor/mentor assigned to course	Associate mentor	Support programs and coordination

academic development (the facilitation of learning); wholistic personal development; professional and career development, which includes the understanding of a work ethic and the professional environment; and faith integration, which is woven throughout the entire process.

The academic development dimension facilitates learning, as each mentor becomes familiar with his or her students’ profiles so that decisions can be made to provide them with optimal support—some need a guide, others need counsel, while others need to be redirected to another supporting arm of student services. This dimension also provides ways for mentors to share data, ask questions, suggest ideas, and redefine roles based on interaction with the students. Mentors are provided with resources that will help them monitor the students’ behavioral triggers and send out early warnings to the ones who may be falling behind. Students receive descriptive, timely feedback that is designed to make a difference in their overall performance—and ultimately their grade.

The personal dimension is facilitated by wholistic instruc-

The instructor integrates personal values and life mission into his or her instruction. This deliberate instruction and modeling help make the most of the online learning environment, and capitalize on opportunities to help students consolidate convictions, value systems, and life mission. Additional elements that ensure that faith integration occurs include the characteristics of the academic tutors and mentors, including their commitment to a biblical worldview and understanding of the philosophical underpinnings of Seventh-day Adventist education. The academic tutor is assigned to a course only after its design is already in place. Each course addresses fundamental topics from a Christian worldview and connects content naturally with the Christian faith, beliefs, and values.

4. *Participant Recruitment.* Academic tutors are Montemorelos University faculty or contract instructors hired for a specific course. They must be experts in their fields who also have experience in teaching at the college or university level. Actions listed above in the mentoring model are part of their job description.

Associate mentors are members of UM support staff who have been invited to get involved in the mentoring program because their personal characteristics align with the requirements for a mentor's profile.

The staff working at the Coordination Office of Tutoring and Student Services have a profile that includes specialization and expertise in student development, retention techniques, student counseling services, online course tutoring, and educational technology. Care should be taken to ensure that all mentors are screened and trained.

5. *Connecting Mentors and Mentees.* The academic tutor serves as a mentor for the students enrolled in his or her courses, or in the assigned courses. The associate mentor is assigned one or two students, and his or her area of involvement focuses on the wholistic and personal dimensions. There are no specific guidelines for assigning an associate mentor.

6. *Participant Training and Communication.* The mentoring model requires specialized training and ongoing communication with academic tutors and associate mentors and is coordinated by staff in the Office for Tutoring and Student Services. In this sense, Virtual UM has designed a training program that develops the abilities necessary to run the model. (See the Training Schedule in Table 3.)

7. *Feedback.* The Coordination Office for Tutoring and Student Services is in charge of ongoing follow-up of students based on the detailed reports of the e42 Platform (UM's learning-management system) and maintains ongoing communication with tutors, teachers, and students. This allows that office to keep track of the implementation process and to make adjustments as needed.

8. *Model Assessment.* Currently, only the students' perceptions of the effectiveness of the program are being assessed. Plans are in place to conduct other types of assessment, such as an evaluation of the mentors' work, based on data collected over time. There are several examples of tools that can be used to help mentors assess their own performance. The University of Wisconsin-Madison has a 26-skill assessment that helps mentors self-reflect. The assessment tool can also be used by programs to help mentees evaluate their mentors (see <https://ictr.wisc.edu/mentoring/mentor-evaluation-form-examples/>).

Conclusion

The flexibility and accessibility offered by online studies are very attractive to non-traditional students. Their decision to continue with a program, however, may be strongly influenced by their work and family responsibilities. Mentoring is an important strategy that enables the university to meet the specific needs of this group. Montemorelos University's Virtual UM Comprehensive Mentoring Program enables teaching faculty to not only provide participants with aca-

Table 3. Training Program for the Virtual UM Mentoring Model

Type of Assistant	Type of Training
Beginner Academic Tutor	Online course: Online training in academic tutoring (15 hours).
Experienced Academic Tutor	Micro-learning: Short videos on effective tutoring strategies (5-7 minutes).
Beginner Mentor	Face-to-face training: Ensuring mentors' competence (2 hours).
Experienced Mentor	Micro-learning: Short videos with strategies on the effectiveness of mentoring actions (7-10 minutes).

demical support, but also offer spiritual support through integrating a Christian worldview, personal faith experiences, and commitment to service and mission into courses and connections with students. Wholistic models are needed to integrate key aspects of the students' learning experiences as they matriculate through their program of study. ✍

This article has been peer reviewed.



Lorena Neria de Girarte, MBA, is Dean of the School of Online Education (UM-Virtual) at Universidad de Montemorelos, Nuevo Leon, Mexico. Her experiences in higher education include more than 20 years as a professor, 12 of those in online education, and six years as an administrator.

Recommended citation:

Lorena Neria de Girarte, "Mentoring: An Intervention Program for Non-traditional Students," *The Journal of Adventist Education* 81:2 (April-June 2019): 26-31.

NOTES AND REFERENCES

- Silvia Gilardi and Chiara Guglielmetti, "University Life of Non-traditional Students: Engagement Styles and Impact on Attrition," *Journal of Higher Education* 82:1 (January-February 2011): 33-53; Raphael M. Mutepa, "What Motivates Non-traditional Students to Choose Social Work as a Major/Profession?" *Encuentros* 11:2 (December 2013): 155-168; Heather T. Rowan-Kenyon, "Predictors of Delayed College Enrollment and the Impact of Socioeconomic Status," *Journal of Higher Education* 78:2 (March-April 2007): 188-214.
- Karen A. Kim, "Exploring the Meaning of Nontraditional at the Community College," *Community College Review* 30:1 (July 2002): 74-89.

3. Lyle Munro, "Go Boldly, Dream Large!: The Challenges Confronting Non-Traditional Students at University," *Australian Journal of Education* 55:2 (November 2011): 115-131; Pedro Rosario et al., "An Explanatory Model of the Intention to Continue Studying Among Non-traditional University Students," *Psicothema* 26:1 (2014): 84-90. doi: 10.7334/psicothema2013.176.
4. U.S. Department of Education, *Demographic and Enrollment Characteristics of Nontraditional Undergraduates: 2011-2012* (2015): <https://nces.ed.gov/pubs2015/2015025.pdf>.
5. Phu Vu et al., "Factors Driving Learner Success in Online Professional Development," *The International Review of Research in Open and Distributed Learning* 15:3 (July 2014): <http://www.irrodl.org/index.php/irrodl/article/view/1714>. See also Eric A. Vance et al., "An Eight-Step Guide to Creating and Sustaining a Mentoring Program," *American Statistician* 71:1 (October 2016): 23-29;
6. Manuel C. F. Pontes and Nancy M. H. Pontes, "Enrollment in Distance Education Classes Is Associated With Fewer Enrollment Gaps Among Independent Undergraduate Students in the US," *Journal of Asynchronous Learning Networks* 16:1 (January 2012): 79-89: <http://dx.doi.org/10.24059/olj.v16i1.175>; Claire Wladis, Alyse C. Hachey, and Katherine Conway, "Which STEM Majors Enroll in Online Courses, and Why Should We Care? The Impact of Ethnicity, Gender, and Non-traditional Student Characteristics," *Computers and Education*, 87:C (September 2015): 285-308; _____, "The Representation of Minority, Female, and Non-Traditional STEM Majors in the Online Environment at Community Colleges: A Nationally Representative Study," *Community College Review* 43:1 (January 2015): 89-114.
7. Vincent Tinto, *Completing College: Rethinking Institutional Action* (Chicago: The University of Chicago Press, 2012).
8. Patricia Forbus, John J. Newbold, and Sanjay S. Mehta, "A Study of Non-traditional and Traditional Students in Terms of Their Time Management Behaviors, Stress Factors, and Coping Strategies," *Academy of Educational Leadership Journal* 15:S1 (Special Supplement 2011): 109.
9. Jacqueline L. Beres and Jess C. Dixon, "Examining the Role of Friendship in Mentoring Relationships Between Graduate Students and Faculty Advisors," *Collected Essays on Learning and Teaching* 9 (June 2016): 111-124. doi: 10.2329/celt.v9i0.4440; Elize C. Du Plessis et al., "Adapt or Die: The Views of UNISA Student Teachers on Teaching Practice at Schools," *Africa Education Review* 7:2 (2010): 323-341. doi: 10.1080/18146627.2010.515401; Eric Dubon et al., "La Mentoría como Herramienta para la Mejora de la Calidad de la Docencia en el Primer Curso de Grado." Presented at IX Jornadas de Redes de Investigación en Docencia Universitaria, Diseño de Buenas Prácticas Docentes en el Contexto Actual (1279-1289) in Alicante, Spain, 2011; Marion A. Eppler, C. Carsen-Plentl, and B. L. Harju, "Achievement Goals, Failure Attributions, and Academic Performance in Nontraditional and Traditional College Students," *Journal of Social Behavior and Personality* 15:3 (September 2000): 353-372; Silvia Gilardi and Chiara Guglielmetti, "University Life of Non-Traditional Students: Engagement Styles and Impact on Attrition," *Journal of Higher Education* 82 (January/February 2011): 33-53; Sally Ann Goncalves and Dunja Trunk, "Obstacles to Success for the Nontraditional Student in Higher Education," *Psi Chi Journal of Psychological Research* 19:4 (Winter 2014): 164-172.
10. William G. Tierney, Zoe B. Corwin, and Julia E. Colyard, eds, *Preparing for College: Nine Elements of Effective Outreach* (Albany, N.Y.: State University of New York Press, 2005).
11. Angela Lee Duckworth, "The Key to Success?" (2013): https://www.ted.com/talks/angela_lee_duckworth_the_key_to_success_grit.
12. Elicia Funk and Noreen D. Ek, *Mentoring Youth in Brandon: Successes, Challenges, and Best Practices* (Manitoba, Canada: Centre of Excellence for Child and Youth Centred Prairie Communities Research Subcommittee, 2002).
13. Lewis Z. Schlosser, "A Qualitative Examination of Graduate Advising Relationships: The Advisee Perspective," *Journal of Counseling Psychology* 50:2 (April 2003): 178; Ellen G. White, *Education* (Mountain View, Calif.: Pacific Press, 1903), 17-19.
14. Tabitha Grace Mukeredzi, Nonhlanhla Mthiyane, and Carol Bertram, "Becoming Professionally Qualified: The School-based Mentoring Experiences of Part-time PGCE Students," *South African Journal of Education* 35:2 (May 2015): 1-9. doi.org/10.15700/saje.v35n2a1057.
15. Nuria Manzano Soto et al., "El Rol del Mentor en un Proceso de Mentoría Universitaria," *Educación XX1* 15:2 (2012): 93.
16. Carolina Fernández-Salinero Miguel, "La Tutoría Universitaria en el Escenario del Espacio Europeo de Educación Superior: Perfiles Actuales," *Teoría de la Educación. Revista Interuniversitaria* 26:1 (April 2014): 161: doi.org/10.14201/teoredu2014261161186.
17. White, *Education*, 13.
18. Xavier Ferré et al., "Plan de Orientación y Acogida para un Nuevo Título de Grado Acorde al EEES en la Facultad de Informática de la Universidad Politécnica de Madrid" (December 2009): <http://dugi-doc.udg.edu:8080/handle/10256/2004>; Cara Poor and Shane Brown, "Increasing Retention of Women in Engineering at WSU: A Model for a Women's Mentoring Program," *College Student Journal* 47:3 (September 2013): 421-428; Victor Sáenz et al., "Developing a Latino Mentoring Program: Project MALES (Mentoring to Achieve Latino Educational Success)," *New Directions for Higher Education* 2015:171 (September 2015): 75-85. doi: 10.1002/he.20144; Marifé Sánchez García et al., "Evaluación de un Modelo de Orientación Tutorial y Mentoría en la Educación Superior a Distancia," *Revista de Educación* 35:6 (September-December 2011): 719-732: <https://ulir.ul.ie/handle/10344/4754>; William G. Tierney and Lisa D. Garcia, "Getting In: Increasing Access to College via Mentoring. Findings From 10 Years of a High School Mentoring Program" (October 2014): <http://eric.ed.gov/?id=ED559562>.
19. Fernández-Salinero Miguel, "La Tutoría Universitaria en el Escenario del Espacio Europeo de Educación Superior: Perfiles Actuales."
20. Brenda Kettle and Neal Sellars, "The Development of Student Teachers' Practical Theory of Teaching," *Teaching and Teacher Education* 12:1 (January 1996): 1-24.
21. Soto et al., "El Rol del Mentor en un Proceso de Mentoría Universitaria."
22. Sanchez Garcia et al., "Evaluación de un Modelo de Orientación Tutorial y Mentoría en la Educación Superior a Distancia."
23. Kemi Elufiede and Bonnie Flynn, "Current Explorations of Adult Learner: Implications for Mentoring and More." Presented at the Adult Higher Education Alliance Annual Conference Proceedings, March 10, 11, 2016, in Orlando, Florida: <https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED569961&lang=es&site=ehost-live>.
24. Arizona State University, "Academic Skills Tutors" (July 26, 2016): <https://tutoring.asu.edu/student-services/academic-skills-tutors>.
25. Paige Haber-Curran, Daphne Everman, and Melissa A. Martinez, "Mentors' Personal Growth and Development in a College Access Mentorship Program," *Mentoring and Tutoring: Partnership in Learning* 25:4 (November 2017): 485-503. doi: 10.1080/13611267.2017.1403558.
26. Mary McMahan, Brigid Limerick, and Jan Gillies, "Mentoring as a Career Guidance Activity: Fostering Non-traditional Career Exploration for Girls," *Canadian Journal of Career Development* 3:1 (2004): 5-11.
27. Liisa Postareff, Sari Lindblom-Ylänne, and Anne Nevgi, "The Effect of Pedagogical Training on Teaching in Higher Education," *Teaching and Teacher Education* 23:5 (July 2007): 557-571. doi: 10.1016/j.tate.2006.11.013.
28. Michelle Drouin, Jennifer Stewart, and Karen Van Gorder, "Using Methodological Triangulation to Examine the Effectiveness of a Mentoring Program for Online Instructors," *Distance Education* 36:3 (October 2015): 400-418; Samuel D. McQuillin, Gerald G. Straight, and Elina Saeki, "Program Support and Value of Training in Mentors' Satisfaction and Anticipated Continuation of School-based Mentoring Relationships," *Mentoring and Tutoring: Partnership in Learning*, 23:2 (2015): 133-148. doi: 10.1080/01587919.2015.1081735; Maryna Zembytska, "Mentoring as the Core Element of New Teacher Induction in the USA: Policies and Practices," *Comparative Professional Pedagogy* 6:2 (June 2016): 67-73.
29. Pilar Gazo, "Trayectorias de Persistencia y Abandono de Estudiantes Universitarios no Convencionales: Implicaciones para la Orientación," *Revista Electrónica Interuniversitaria de Formación del Profesorado* 18:2 (May-August 2015): 107-124. doi: 10.6018/reifop.18.2.220101.
30. Vance et al., "An Eight-Step Guide to Creating and Sustaining a Mentoring Program."

Effective Governance:

The Legal and Fiduciary Duties of Boards



Most individuals who are elected to serve on a school board consider it a privilege to contribute their time and expertise to their alma mater or their church. A position on the school board not only allows individuals the opportunity to give back, but for some, the position also allows them to keep an eye on and to advocate for their children or for their church. There are others who, because of prior unpleasant experiences on ill-managed boards, consider such service to be an imposition on their time and resources, and this is unfortunate.

With board membership comes legal, ethical, and fiduciary responsi-

bilities. The primary role of the school board and its members is to represent and act as the link between the constituency that elected them and the school administration, and to exercise legal and fiduciary duties in governing and carrying out the interests of the constituency in the operation of the school. An effective school board is one that understands its purpose as a governing body and its role as a partner in the school's success.

Governance experts warn that certain inherent problems make it difficult for boards to function and effectively carry out their responsibilities. Peter Drucker, the governance guru, stated more than 40 years ago that "there is one thing all boards have in common, regardless of their legal position. They do not function."¹ Drucker's assessment might seem unforgiving and negative, and indeed, there are times when boards do not function well. However, this article aims to help your board function more effectively.

How should a board function in order to effectively fulfill its legal and

BY KARNIK DOUKMETZIAN and JOSEPH K. C. DOUKMETZIAN

fiduciary obligations? This article examines these obligations and will suggest best practices that will empower boards to function effectively, and enable individual board members to fulfill their legal and fiduciary obligations.

Governance and Management

Board members must always bear in mind that they represent the interests of the constituency, whether that is the local sponsoring church(es), the conference, union, or division, rather than just representing their own individual interests. Effective governance starts with the actions of the school board. The board's role is to ensure that the school operates in such a way as to fulfill its mission.

The board should not involve itself in the day-to-day management of the institution. This is the function of the administration. The board's role is to monitor, guide, and enable good management, as well as to establish strategy and direction for the school in order to guide the administration and represent the interests of the sponsors. Effective school boards accomplish this by shaping the mission and strategic direction of the school, by ensuring that they have adequately allocated financial resources to effectively operate the school, and by committing themselves to maintaining the school's unique Seventh-day Adventist identity.

The Function of School Boards

Many school board members, once appointed, attempt to operate the school as if it were their own business or company, failing to recognize that they were elected by the constituency to represent its interests. They are merely representatives of the "owners."

For example, the North American Division *Working Policy* provides guidance regarding the role that K-12 school boards must play. It states: "In every school there shall be organized a school board elected by the school constituency. (For details of procedure, see the local

union education code.) The school board is responsible for the operation of the school within the guidelines and policies adopted by the conference board of education and the school constituency as stated in the school constitution. The employment, assignment, transfer, retirement, termination, or dismissal of school personnel is the function of the conference board of education."² The *Working Policy* then goes on to list the functions that these school

boards are expected to fulfill (see Table 1).³

At all levels, but specifically at the higher education level, school boards should also oversee matters critical to the health of the organization, including the viability of the school's business model, the integrity of internal systems and controls, and the accuracy of the financial statements. The school board should also help evaluate and manage risk (identify and control situations that could pose a

Table 1. Functions of K-12 School Boards

1. Ensure the implementation of policies and plans of the conference office of education.
2. Develop a clear, practical set of objectives in harmony with the Seventh-day Adventist philosophy of education.
3. Develop policies in areas of local concern such as:
 - a. Use of school property;
 - b. Bus schedules and routes;
 - c. Purchasing procedures;
 - d. Tuition and/or other methods of support;
 - e. Admission requirements (in accordance with state, provincial, or conference guidelines);
 - f. Equipment and maintenance of school plant;
 - g. Textbook purchases (pupil or school-owned);
 - h. Master planning;
 - i. Criteria for selection and use of films and media materials;
 - j. Dress and social behavior.
4. Support the principal (or head teacher) in the administration of the school program.
5. Recommend employment of personnel as needed to the conference board of education.
6. Support the Home and School Association.
7. Ensure that official minutes of each meeting of the school board and subcommittees are kept, and one copy is filed with the conference office of education. Academy boards are to file copies with the union and conference offices of education.
8. Consider appeals and answer questions regarding the operation of the school.
9. Participate in the process of school evaluation.
10. Cooperate with and support the conference office of education in-service education program.
11. If not already in place, adopt a plan of school organization that includes a constitution and bylaws.
12. Adopt the recommended conference-wide school calendar.
13. Authorize the preparation of a school bulletin.
14. Assume responsibility for the planning and funding of an annual operating budget.
15. Assume responsibility for planning and funding a capital-improvements budget.
16. Consult the conference guidelines for construction procedures when considering renovations and erecting new buildings.
17. Cooperate with the union and conference offices of education regarding matters of curriculum development.
18. Appoint subcommittees as needed, such as personnel, finance, etc.

problem for the institution), as well as oversee and protect the resources of the organization.

The functions of the school board must be carried out in the context of governance rather than management. The role of any board is to govern, not manage, the affairs of the organization. It is to provide strategic direction and oversight. Governance includes the establishment of policies and continuous monitoring of their implementation. Governance means requiring accountability from the school's administrators by setting goals, regularly evaluating their own performance as a board, and curtailing exertions of individual power that might surface, whether from the school's administrators, board members, church officials, or constituency. Good governance requires high levels of accountability, combined with the duty to improve the success and viability of the organization. Governance is about providing direction and a framework for the school's operations and ensuring that these functions are efficiently accomplished. In summary, *daily management and operations are not the responsibility of school boards, whereas governance is* (see Table 2).

Duties of Board Members

Board members, in every type of organization, have imposed on them numerous legal and fiduciary duties and obligations. Courts have delineated many of these duties, *such as the duty of knowledge, the duty of diligence, and the duty of skill and prudence.* The duty of knowledge requires that board members become familiar with the corporate cornerstones of the organization, such as the charter, constitution, or bylaws, and understand how to ensure that the mission, vision, and values of the organization are achieved. The duty of diligence requires active involvement on the board and necessitates members being prepared for

Table 2. Distinctions Between Governance and Administration*

Governance refers to the power to:	Administration refers to the:
a. Create an institution.	a. Leadership of the institution
b. Provide resources, policy guidance, and leadership necessary for its and successful existence continued.	b. Management of the institution
c. Ensure that the institution remains true to its mission and stated purposes.	c. Day-to-day conduct of the functions of the institution
d. Ensure that the institution has systems and practices of accountability for compliance with applicable laws and regulations and operations in an ethical manner.	
*Taken from Board Policy Manual Sample: https://education.adventist.org/wp-content/uploads/2017/10/Board-Policy-Manual-Sample.pdf , 2, 3.	

meetings by reviewing the agenda, attending board meetings regularly, being prepared to discuss the business at hand, and participating in all votes. The duty of skill and prudence requires board members to use any specific expertise they might have to benefit the organization, and taking care to anticipate the potential consequences of board decisions.

But the three most critical standards or duties imposed on board members are the *duty of care*, the *duty of loyalty*, and the *duty of obedience*. These duties are so critical because they are all fiduciary duties that also have ethical and moral implications. In determining whether someone acted in an improper manner, courts use a legal standard based on the “reasonable” or “prudent” person. This standard basically means that as humans, we owe one another an average standard of care, skill, and judgment in how we conduct ourselves. In other words, this legal standard asks, What would a reasonable person do in those circumstances? However, all board members also act in a fiduciary role. A *fiduciary* is defined as someone who acts for and on behalf of another in a relationship of trust. In

this case, the board members are both fiduciaries of the school constituencies that appointed them, and of the owner (conference, union, division, or General Conference) as the ultimate trustor. As such, this fiduciary responsibility requires that every action or decision that a board member takes must be for the sole benefit and interest of the ones who have placed that trust in him or her.

The Duty of Care

The first major duty for board members is the duty of care. This duty deals with the manner in which a board makes decisions and carries out the governance of a school. Board members are expected, in all aspects of their work, at all times, to exercise a high level of skill, carefulness, and prudence. The legal requirement is that each board member act “(1) in good faith, and (2) in a manner the [board member] reasonably believes to be in the best interests of the [organization],” and shall act “with the care that a person in a like position would reasonably believe to be appropriate under similar circumstances.”⁴

The legal standard asks what a

reasonable person would do in the same or similar circumstances. In most instances, courts will not hold a board member liable for errors or mistakes in judgment, as long as his or her actions meet the legal standard and requirements. To meet this legal standard, the board member must have been disinterested and independent, made prudent decisions, have acted in good faith, attended scheduled meetings, and have been reasonably diligent in informing himself or herself of the facts and issues being dealt with by the board. At a minimum, to be protected under this rule, the board member must attend and actively be involved in board meetings, carefully select and diligently supervise administration, stay informed, and be financially accountable to the school board. Board members must remember that upon accepting the opportunity to serve on a board, they have accepted these responsibilities. Board meetings are not social gatherings; they are business meetings, which carry with them obligations and responsibilities for which board

members are fully accountable.

It is often this duty that makes individuals reluctant to serve on the boards of schools, local churches, or other non-profits. If board members cannot effectively serve and carry out their fiduciary responsibilities, they should decline the appointment, lest they bring unintended liability on themselves, the school, and the parent organization.

The Duty of Loyalty

The second major duty for board members is the duty of loyalty. This duty requires board members to exercise their powers in the best interests of the organization, and to be faithful to the organization and its mission. The interests of anyone other than the organization are to be set aside.

Board members should not be motivated by personal, business, or private interests, but by what is in the best interests of the school. Positions on the board should not be used for personal benefit or to secure advantages for family or friends. Breaches

of this duty usually arise in the form of unreported or undocumented conflicts of interest that occur when board members have “such a substantial personal interest in a transaction that it reasonably might affect their judgment.”⁵ When serving on multiple boards, board members need to remember that they *must* act in the best interests of the organization for which they are *presently* making decisions. For example, if a church official serves on a school board, when participating in decisionmaking, he or she needs to vote in such a way that the best interests of the school are put first, rather than putting his or her organizational administrative responsibilities first.

Conflicts of interest breach the duty of loyalty because it is unethical for a board member to profit from his or her position at the expense of the organization, or for the member to enable friends and family to benefit from his or her membership on the board. For board members, examples of this would include engaging in activities that compromise or undermine the needs of the school, using school assets to develop personal business opportunities, or using their position to obtain personal benefit by selling, endorsing, or promoting a product, contact, or transaction. For example, imagine that a school is in the process of remodeling or building an addition. One of the board members, a general contractor, submits a proposal for the work to the principal after having found out about the school’s project because of his service on the board. No other proposals are obtained. The board discusses the proposal in the board member’s presence, and he participates in the discussion and does not excuse himself or declare that he has a conflict of interest. No provision is made to ensure that the price quoted is a reasonable estimate for the project.

Since the board member will personally benefit from the granting of the contract and the discussion on whether to grant the contract occurred in his presence, the rest of the

Box 1. Sample School Board Code of Ethics*

1. Uphold and enforce all laws and regulations;
2. Make decisions based on the educational welfare of children;
3. Confine board actions to policy making, planning, finances, and appraisal;
4. Carry out designated responsibilities—not administering the school but seeing that it is well run;
5. Recognize that authority is vested in the board, and make no personal promises or take any private action that might compromise the board;
6. Refuse to surrender independent judgment to special or partisan interests, and do not use one’s position to secure personal gain or gain for friends or family;
7. Ensure confidentiality regarding all matters that would injure individuals or the school if disseminated. For all other matters, provide accurate information;
8. Vote to appoint the best-qualified personnel (e.g., teachers or principal/president);
9. Support and protect school personnel in proper performance of their duties;
10. Refer all complaints to the principal/president, and bring matters to the attention of the board only after administrative actions have failed to achieve resolution.

* Modified from the *New Jersey Department of Education Code of Ethics for School Board Members* (1996-2017): <https://www.state.nj.us/education/ethics/coe.htm>.

board placed themselves in a compromised situation.

When conflicts of interest arise, certain steps must be taken to protect the board ethically and legally. School board members who have either an actual or a potential conflict of interest should disclose this in writing (see Box 2), remove themselves from the boardroom during the discussion, avoid any involvement in the discussion, and refrain from voting on the matter in question.

Board members should acquaint themselves with their division's *Working Policy* requirements relating to conflict of Interest and abide by those requirements. Board members must always be mindful that even though they are not prohibited from engaging in all economic or commercial activities with the school, such transactions will be considered to be self-dealing (in other words, the use of one's position on the board for personal benefit, to act in one's own interest rather than in the

best interests of the constituency or organization) unless the proper conflict-of-interest protocols have been followed. In addition, there are some prohibited activities such as engaging in a business activity that would be in direct competition with the activities carried out by the organization, using one's position on a board to further outside personal business interests, making use of or disseminating confidential information acquired through a board position in such a way as to obtain personal benefit, or using one's position on the board to secure employment or favors for one's relatives or friends. These are all prohibited activities, and a board member who engages in such behaviors must be held accountable. The school bylaws should outline the expected conduct required of board members and carefully delineate what happens if a board member fails to uphold his or her duties. If no such guidelines are in place, then boards should seek

legal counsel to help them develop such policies.⁶

One of the other essential characteristics of the duty of loyalty is the responsibility for maintaining the privacy and confidentiality of communications that occur at board meetings. During school board meetings, disciplinary issues relating to students or employees, personnel issues, or other legally protected conversations will occur. Each board member has a legal obligation and a duty to maintain confidentiality and not disclose or discuss these matters outside of the board meeting setting. While our human tendency is to share that "juicy gossip" or just seek advice from friends and relatives, the disclosure of such information exposes the board member, the school, and the church to potential legal liability for breach of this duty.

The Duty of Obedience

The third major duty is the duty of obedience. In carrying out its governance functions, the school board must ensure that it remains faithful to and abides by the purpose and mission of the school. This means that boards should function in accordance with their constitution and bylaws; the educational policies of the conference, union, and division; as well as local, state/provincial, and federal laws and regulations. Boards must ensure that any action taken by the board falls within the power and authority granted to it by the constituency, ensuring that the school is fulfilling its responsibilities that relate to the constituency, the parents, the community, the government, and most importantly, its commitment to function as a Seventh-day Adventist institution of learning. Boards must also ensure that their actions do not venture beyond their given authority. Failing to adhere to the governing documents, exceeding their authority, not abiding by the requirements, or exercising decision making in areas over which the board has no

Box 2. Sample Statements Relating to Conflict of Interest and Ethical Foundations

Sample Conflict of Interest Statements

The Accrediting Association of Seventh-day Adventist Schools, Colleges, and Universities (AAA): https://adventistaccreditingassociation.org/wp-content/uploads/2017/12/aaa_conflict_of_interest_form.pdf

Pacific Union Conference: https://www.puc.edu/__data/assets/pdf_file/0020/56009/Conflict-Interest.pdf

The Center for Nonprofit Management: http://www.resourcesharingproject.org/sites/resourcesharingproject.org/files/Sample_Conflict_of_Interest_Policy_2.pdf

Statement of Ethical Foundations

The General Conference of Seventh-day Adventists: <https://www.adventist.org/en/information/official-statements/documents/article/go/-/ethical-foundations-for-the-general-conference-and-its-employees/>

The North American Division: https://www.rmcsda.org/uploaded_assets/298188

Upper Columbia Conference: <https://www.uccsda.org/English/HR/Documents/Conflict%20of%20Interest%20for%20Exempt%20Employees%20Only.pdf>

Box 3. Key Questions for Each Board

1. Have the constitution and bylaws been reviewed by the board within the past five years?
2. Has the board engaged in a medium- to long-term strategic-planning process? Does the board outline specific goals and objectives for each school year?
3. Is the board actively involved in the process of developing the annual budget? Are comparisons of financial performance to budgeted figures consistently made and reported throughout the year?
4. Has the board developed and instituted financial controls that meet generally accepted practices?
5. Are board members required to make financial contributions to the organization or to student aid, or to solicit funds for these purposes?
6. How active is the board in raising money for school needs or student aid?
7. Is a process in place to conduct regularly scheduled performance review of the board officers and the board as a whole?
8. Does the board play a leading role in promoting the organization to internal and external stakeholders (church)?
9. Do board members actively support the school's renewal and revitalization (physical plant and Spiritual Master Plan)?
10. Is there a school board manual? (If not, create one.) Do members reference it to facilitate better understanding of their roles and responsibilities?
11. Have a sufficient number of subcommittees been developed to accomplish the work of the board effectively?
12. Does the board solicit the views, interests, concerns, etc. of others? (Conference, local church, advisors, friends, parents, constituents, etc.)
13. Is there a process that ensures that appropriately qualified people become members of the board?
14. Does the board actively seek to establish sound and amicable relationships with other organizational entities (local church, conference, union, division, etc.)?
15. Does the board strive to maintain its appropriate role in the overall scheme of organizational function (i.e., Does it avoid micro-managing)?

authority will result in legal challenges that could find them in court and on the wrong side of the law. School boards must consult with legal counsel when dealing with these issues.

Conclusion

Constituencies count on an effective and functioning board to govern the operations of local elementary and secondary schools, as well as institutions of higher education. The success of the school, while measured by how effectively it serves the educational needs of the students

and meeting the needs of the sponsoring organizations, also depends on the ability of the board to function in an orderly and efficient manner in performing its governance functions. Board members must always remember that the legal and fiduciary responsibilities imposed on them require that, at a minimum, they make prudent decisions, be fully informed, fully involved, and fully compliant. The risk of the school not achieving its stated mis-

sion lies in the way that it is governed, and at the very top of an educational institution is the school board. ✍️

This article has been peer reviewed.



Karnik Doukmetzian, Esq., is the General Counsel for the General Conference of Seventh-day Adventists in Silver Spring, Maryland, U.S.A., and the North American Division of the General Conference of Seventh-day Adventists in Columbia, Maryland.



Joseph K. C. Doukmetzian, Esq., is a Claims Counsel with Adventist Risk Management in Silver Spring, Maryland.

Recommended citation:

Karnik Doukmetzian and Joseph K. C. Doukmetzian, "Effective Governance: The Legal and Fiduciary Duties of Boards," *The Journal of Adventist Education* 81:2 (April-June 2019): 32-37.

NOTES AND REFERENCES

1. Peter Drucker, *Management* (New Delhi, India: Allied Publishers, 1973), 628.
2. "K-12 Education Policies," in *North American Division (NAD) of the General Conference Working Policy* (2017-2018), Section FEA 30 20; *The NAD Union Education Code*: <https://adventisteducation.org/superintendents-handbook/4code.html>.
3. *Ibid.*, FEA 30 35.
4. Model Business Corporation Act § 8.30 (2016).
5. *NAD Working Policy* (2017-2018), Section E 85 05.
6. Hamlet Canosa, "Governing Boards: A Practical Guide to Best Practices and Policies" (2008), 31: http://www.columbiaunion.org/sites/default/files/pictures/new_board_manual_07-08l.pdf.



Ty-Ron M. O. Douglas

Audacity Personified: *Leading With*

HOPE,

Searching for Truth(s)

This article examines the theme of *hope* within the context of my own spiritual positionality¹ and my philosophical journey during a graduate course in Philosophy of Education—a course that I was completing as Barack Obama transitioned from presidential candidate to President of the United States.² My transition from graduate student to professor of education coincided with a notable shift in America’s ideological climate and Obama’s presidential campaign in which *hope* was a central tenet. Drawing on what some may describe as primitive biblical principles, in one sense my argument reflects traditional Christianity; yet in another sense, it is far from traditional in that it espouses teachings that are no longer common in traditional, main-

stream, or nominal Christianity. I frame my argument around the controversial notions of big Truths (“T’s”) and little truths (“t’s”) as tangible, yet sometimes misguided, manifestations of humanity’s nihilistic pursuit of meaning in a confusing world.

I believe this topic is important for all educators—particularly educators in higher education in parts of the world where Postmodernism has made an impact because we possess and promote varying notions of truth that collide with, create, clarify, and even confuse the beliefs of our students—many of whom no longer learn about God in public schools or at home, and who invariably wrestle with their own notions of truth. I conclude the article by analyzing my journey as a Christian scholar-educator.

Unlike the American philosopher Richard Rorty,³ who reduces Christianity to New Testament teachings,

my perspective encompasses the whole Bible as a standard for truth, hope, and wisdom in ways that many Christians, including some Seventh-day Adventists, seemingly no longer acknowledge or accept. As such, this article is as much an analysis of humanity’s philosophical pursuit of hope as it is an articulation and acknowledgement of my positionality as a non-traditional Christian academic within the context of my graduate course experience and now as a professor.

Certainly, suspicion of spirituality, religion, and faith abounds inside and outside of the academy. Scholars who see their spirituality as inseparable from their work as advocates of social justice often face challenges embracing “prophetic pragmatism”⁴ without being labeled anti-intellectual or li-

beled as closed-minded. Naming and embracing one's position as a Christian academician can be a highly nuanced and difficult process.⁵ Drawing from my position as a self-identified non-traditional Christian intellectual, this article reveals personal elements of my philosophical encounters with Plato's "philosopher-king,"⁶ Rorty's notion of consensus,⁷ and discourses of hope.

Because I understood that the possibility of the language, label, and legacy of Christianity being used as "tools"⁸ for bludgeoning and beguiling the masses is as real as the God of Christianity, I cautiously began navigating through the treacherous web of opinions surrounding the origin of humanity's philosophical dilemma: the Garden of Eden.

Ellen White explained that "It is a masterpiece of Satan's deceptions to keep the minds of men searching and conjecturing in regard to that which God has not made known, and which He does not intend that we shall understand. It was thus that Lucifer lost his place in heaven. . . . Now he seeks to imbue the minds of men with the same spirit and to lead them also to disregard the direct commands of God. Those who are unwilling to accept the plain, cutting truths of the Bible are continually seeking pleasing fables that will quiet the conscience."⁹

Philosophy—which can be defined as the love or pursuit of wisdom¹⁰—has always been a part of the human experience, although it transcends the existence of humanity.¹¹ The biblical account of the creation and fall of Adam and Eve (see Genesis 1 to 3) suggests that this couple was not only given the responsibility of tending the Garden, but also had the privilege of learning about the intricacies of the universe directly from God.

Arguably, then, philosophy—in its purest form—has been valuable to humanity and validated by God, as long as humans did not abuse their freedom by disobeying the parameters of the Creator, the source of wis-

dom. In this light, Kant's belief that laws are meant to make people free, and individuals must be free to follow the law is not new.¹² Fritz Guy provides important context for this discussion by challenging us to consider how faith and philosophical thought can intersect appropriately within Christian education and Adventist education in particular:

"God and humanity share the ability to think. We can think about God, about the world, and about ourselves—and we can think about thinking. Because of this, our human reality is less like the reality of squirrels, cows, and chimpanzees and more like the reality of God. The more we know and understand, the more clearly and creatively we think, the more we fulfill God's intention for humanity, created in His own image. So the expansion and extension of knowledge that is the mission of higher education need not be regarded as an enterprise that is *hostile to*, or even *outside of*, Adventist faith. Indeed, such expansion and extension can be seen as a *dimension of* our faith."¹³

Where, then, could danger lie in the human pursuit of truth(s) and knowledge? In the Bible, Genesis 3:4 and 5 outlines the deceptive introduction of the counterfeit to the human race: "Then the serpent said to the woman, 'You will not surely die. For God knows that in the day you eat of it *your eyes will be opened, and you will be like God, knowing good and evil*'" (Genesis 3:4, 5, NKJV).¹⁴ As such, it can be contended that philosophy as we know it began with Adam and Eve's disobedience. And since then, some have sought to explain the world and our existence, while simultaneously and systematically denigrating God to nothing more than meaningless conjecture.

Plato posited many intriguing and insightful ideas. His belief in education as the journey of the soul toward

"the good" and his focus on justice were rooted in what appears to have been a sincere desire to improve the human condition. Like Plato, I believe that each person has a nature, but I disagree with him as to its quality. Plato believed that humans find happiness when they find that nature¹⁵; I believe we find happiness when we allow God to change our nature because "The heart is deceitful above all things, and desperately

To misunderstand the magnitude of humanity's fallen condition through a misguided hope in education as the magic cure-all is merely a mutation of the swindling, self-indulged subtleties espoused by the serpent (Satan) in the Garden.

wicked'" (Jeremiah 17:9).

Nevertheless, Plato's value to Western philosophy is exemplified by his claims that disharmony, internal conflict, and war occur when people are working outside of their specialized function, and that violence is the result of violating boundaries. I concur. But I also believe that philosophy, like nominal Christianity, often violates those boundaries. Although Plato acknowledged that there is a Truth to be found and—upon its discovery—humans must align themselves with it, he, like Adam and Eve,

was deceived. To misunderstand the magnitude of humanity's fallen condition through a misguided hope in education as the magic cure-all is merely a mutation of the swindling, self-indulged subtleties espoused by the serpent (Satan) in the Garden. While some may suggest that Plato, who penned his thoughts 2,400 years ago, predates the Bible and Christianity, it is my contention that—as a descendant of Adam—Plato's philoso-

In a postmodern society where the prevailing sentiment is the belief in varying and independent little truths, there is a growing unwillingness by many to even consider the possibility that Truth (big "T") exists.

phy merely predated Christianity as a religion and not Christianity as an experience. The biblical record suggests that Christ is the Creator in the Old Testament as well as the crucified Savior of the New Testament:

"In the beginning was the Word, and the Word was with God, and the Word was God. He was in the beginning with God. All things were made through Him, and without Him nothing was made that was made. . . . And the Word became flesh and

dwelt among us, and we beheld His glory, the glory as of the only begotten of the Father, full of grace and truth" (John 1:1-3, 14).

The writings of Ellen G. White¹⁶ and T. E. White¹⁷ agree that a Christian whose interpretation is based on the acceptance and legitimacy of the whole Bible must consider that Christ is not only the Redeemer in the New Testament, but also the Creator in the Old Testament. This acknowledgment is significant because many scholars and contemporary philosophers attempt to position Plato and his writings as predating Christianity. This argument must be questioned in light of the biblical record, which suggests that Christianity is a relational experience that began (for humanity) when Adam and Eve were created in the Garden of Eden.

In a postmodern society where the prevailing sentiment is the belief in varying and independent little truths, there is a growing unwillingness by many to even consider the possibility that Truth (big "T") exists. The experiment—started by Adam and Eve's disobedience and continued by philosophers like Plato and Kant, who failed to recognize God as the Truth—has left humanity with many holes to fill in our collective conscience. For example, the postmodern proliferation of little "t's," albeit "rational,"¹⁸ is rivaled only by the absence of peace and the proliferation of antidepressants and Tylenol in our postmodern society: The holes and the corresponding headache of our arrogance just won't go away! Rorty's pragmatism and ancillary hope in humanity's "ability to communicate,"¹⁹ adjust, and find "eventual agreement"²⁰ is a far less likely prospect than the Second Coming that he mockingly questions.

The rapid deterioration of the environment and morality seem to suggest that Rorty may have put his hope in the wrong occurrence; beyond the prospect that the pursuit of social justice is "the only basis for a worthwhile human life,"²¹ we are forced to

grapple with the reality that we humans are killing ourselves and one another. Hope, in this regard, seems insufficient.

Plato, Kant, and Rorty—all of these philosophers appear to have put their faith in something or someone other than Jesus Christ and that, for me, is a hopeless and depressing prospect. I recognize that my position is dependent on the acceptance and interpretation of the Scriptures, and I understand that there are many, like Rorty²² who would view my perspective with suspicion. Perhaps the disconnect lies in the Christians Rorty describes and in his failure to understand them. Either way, I respect our power of choice and our capacity to disagree amicably. But unlike the Christians Rorty describes, I do not believe one can "become a member of a particular sect or denomination in order to prepare for [the Second Coming]."²³ Instead, one prepares by accepting and obeying the Truth (God), through the growth of a daily love relationship: "I am the way, the truth, and the life. No one comes to the Father except through Me" (John 14:6). And, like Plato, I believe we experience and know the Truth as we get closer to it.

Similar to Plato's philosopher-king who must share with others still in his cave,²⁴ I, too, must share my perspective while carefully dodging the sermonic overtures that often set off the two-headed trip-alarm of skepticism and cynicism. The abuse of God and religion has made this tough, though, for there are many who, with Mahatma Gandhi, would declare: "I like your Christ, I do not like your Christians. Your Christians are so unlike your Christ."²⁵ This perspective has valid grounds, based on the many "Christians" and "Christian educators" who do a poor job of representing Christ. I am also reminded that "faith is the substance [realization] of things *hoped* for, the evidence [confi-

While large-scale reforms and political inertia may discourage many educators from envisioning and engaging in critical practices that can heal, I am reminded that the first and most important system over which one has agency is the institution of self. We cannot lead students any farther than we are prepared to go ourselves.

dence] of things not seen” (Hebrews 11:1, KJV). Ironically, Rorty quotes a portion of this biblical passage when describing his “willingness to refer all questions of ultimate justification to the future.”²⁶ Each of us, then, must decide where we will place our faith and hope.

In the penultimate class period of my graduate Philosophy of Education course, I will never forget the stifling silence and eventual grunts that greeted the professor’s request to my classmates and me to articulate our thoughts on *hope*. The silence was a fairly accurate barometer of people’s real sense of hope; there was an obvious awareness of ineptitude. In a world searching for answers, there seem to be few alternatives that help us sleep better at night.

The same wound that mars the fabric of Plato’s big “T” without the big “G” (God) encroaches onto Rorty’s ideas, through the inevitable diminution of the Truth to little truths. Humanity’s futile attempt to be God, coupled with the worship of vast and varied pseudo-gods (i.e., the worship of humankind and possessions),²⁷ facilitate the use of philosophy as an anesthetic—or “tool”²⁸—to numb the pain created by the abyss between humanity and hope. As educators and leaders in education, we must have the audacity to create institutions and spaces of hope and healing.

Clearing Away the Blind Spots

While large-scale reforms and political inertia may discourage many educators from envisioning and engaging in critical practices that can heal, I am reminded that the first and most important system over which one has agency is the institution of self. We cannot lead students any farther than we are prepared to go ourselves.²⁹ We must seek to know our authentic selves and be willing to utilize the pedagogical power that exists in our stories, our belief systems, our journeys, and our survival—inside and outside the academy.

Equally important, we must also consider how our truths, journeys, and belief systems can create blind spots in our lenses, teaching, and leadership. This process was crystallized during my graduate school experience and is a process that continues to inform my practice as a leader and professor. I sought to revisit revisiting the epistemological (re)awakening that occurred as part of my doctoral program, where I had time to critically consider my previous classroom experiences as a K-12 teacher (including five years at an Adventist academy) and my hopes for my future practice.

A lot has changed since I initially drafted this manuscript in the fall of

2008 as a first-year Seventh-day Adventist doctoral student navigating a philosophy of education course in a public university. As part of my professional development and spiritual accountability during that course, I chose to read *The Great Controversy* as parallel content (curriculum) to balance the perspectives to which I was being exposed in class.

I enjoyed *The Great Controversy*, and I remember with vivid detail my efforts to share it with a classmate of mine—a dreadlocked, African-American woman who was deeply spiritual and humbly inquisitive about matters of faith. My epistemological lens then—which, today, I would describe as a combination of religious arrogance and colonial ignorance—conditioned me to believe that I had much “truth” to share with her, particularly as she shared that she was courting tenets of Rastafarianism at the time.

In short, I judged her. Yet, on the night that I sought to offer a copy of *The Great Controversy* to her, she became the teacher. “I can’t read that,” she said, bristling back with a look of confusion at my apparent ignorance to that which she found offensive. “Look at that cover,” she continued. It was a book cover I had cracked opened numerous times but had never critically considered until she awakened me to its content: The cover was void of any people of color—from the image of Jesus, to the angels, to the people who were being saved. Every aspect of the cover was Eurocentric, and I had missed that fact.

This encounter sparked a reconsideration of my ways of knowing my faith, myself, my history, my thoughts on curriculum, my pedagogical practices, and classroom policies as a teacher, and the religious context in which I had lived out these truths—as a black male Seventh-day Adventist who was born and raised in Bermuda but was now being challenged to reflect on the totality of my journey—including my African-American lineage.

In many ways, my engagement with my classmate transcended our evaluation of Plato, Kant, and Rorty, but our exchanges were actually an extension of it. Namely, that the journey of faith and its intersections with our individual identities and institutional associations is a complex, oft-traveled road, particularly for those in pursuit of destinations of hope. As Stephen Mansfield³⁰ notes in *The Faith of Barack Obama*, this is a journey Obama came to know long before his journey to public office and cannot be separated from his mixed racial background, the loss of his biological father and stepfather, and the opportunity to mobilize his faith at Trinity United Church of Christ, a vehicle he saw as both pragmatic and potent enough to satisfy his lofty beliefs in hope and justice.³¹

I, too, know this struggle as an African-Bermudian/African-American who has had to grapple with the loss of a biological father—a biological father who rests in a grave in St. Louis, Missouri, the very state where I now serve as a professor at the flagship university. I wrestle with the reality that I could have and perhaps should have attended the same schools as Michael Brown in Ferguson,³² had I been raised with my father and his side of the family. I know this wrestling as a ministry leader and pastoral team member in a predominately white church; I know this as a leader who has sought to mobilize a congregation to activate the ethos of a Sabbath school quarterly *on* community engagement in the urban core of our city, rather than merely making philosophical remarks during Sabbath school *about* community engagement. I know this as a professor and leader at the University of Missouri during some troubling times and high-profile incidents of racial unrest.

Listen actively and pay attention to students' experiences. Students often face personal hardships that can derail their academic performance. Offer condolences, extend a deadline, direct or encourage them to seek support from a campus support service, and follow up on their progress. This is just as important as providing critical feedback on their work or having high expectations for attendance and punctuality.

Asking Critical Questions

Living, learning, and leading in these complex spaces has forced me to see and (re)envision my faith through culturally relevant lenses. I have the audacity to believe, live, lead, and teach with the hope that we can simultaneously work within imperfect schools, systems, and churches, even as we challenge and changed them for the better. The #ItIsTimeAU uprising at Andrews University and the subsequent response, to date, from the administration is a poignant and promising exemplar of this,³³ an exemplar that I hope can make Western Adventist education and our churches better as we courageously face our underdeveloped strengths and model for the world how to respond to difference and deficits in our institutions.

Still, questions remain. For example, one must ask: What truths/Truths in our philosophical, epistemological, educational, and religious systems may be inhibiting us as leaders and educators from asking vital questions about cultural relevancy and its impact on curriculum—inside and outside of the schoolhouse? What will become of our institutions and our faith five

years removed from the tragic death of Michael Brown in Ferguson, four years removed from the uprisings on the University of Missouri–Columbia campus, two years removed from the release of the #ItIsTimeAU video, and more than three years after the conclusion of a U.S. election campaign that was arguably more intense and divisive than any in recent memory, including divergent perceptions of truth, facts, and “alternative facts”?³⁴ As Christian educators, we must be willing to ask critical questions, such as these:

- How comfortable are we with discussing and addressing issues of race, racism, culture, equity, and difference?
- How do our understandings and approaches to Truth/truth(s) impact our pedagogy and perspectives of students, families, curriculum, leadership, and the communities that incubate these entities?
- In a national/international context where racialized tensions and realities have boiled over, how has our pedagogy been impacted and implicated, and perhaps more importantly,

how can our classroom discourses (inside and outside the schoolhouse) positively contribute to the hope that we have as Christians—without being ignorant about or dismissive of injustice?

- More fundamentally, where do we find hope, and how do we communicate this hope each day to our students and others within our sphere of influence?

Operationalizing Intentional Practice

Like hooks,³⁵ I now teach with the understanding that teaching is a sacred art that requires me to care for the whole student. This means being intentional in my practice and recognizing that every interaction has the potential to impact the lives of my students. Here are some suggestions based on a few examples from my own experience of how I recommend readers operationalize these principles:

1. *Create a welcoming and accepting learning environment.* For example, greet students by their name (properly pronounced). This is just as important as the grades they earn since it speaks to their sense of belonging.

2. *Listen actively and pay attention to students' experiences.* Students often face personal hardships that can derail their academic performance. Offer condolences, extend a deadline, direct or encourage them to seek support from a campus support service, and follow up on their progress. This is just as important as providing critical feedback on their work or having high expectations for attendance and punctuality.

3. *Recognize that there are differences even within similar ethnic and cultural groups.* Students' lenses, opportunities, and perspectives are shaped by their experiences, and these also impact their learning needs. I know this from my own experience as an African-Bermudian learning about the African-American experience, and the same could be said about other ethnic and cultural

groups. Being sensitive to and aware of the ethnic and cultural identities of students is vital, and understanding that there is diversity within groups is even more important.

4. *Cultivate an environment that is inclusive and celebrates cultural expression and excellence.* For example, include imagery in curricular materials and presentations that represents a range of ethnicities and cultures. It is vital that students see themselves represented in meaningful ways. We are all God's creation.

5. *Seek to be radically balanced!* Acknowledge that issues of race still challenge our "Christian" institutions; but just like our Christian walk, we must daily tread in the example of Jesus Christ. For example, this means sharing with my church congregation that if we did not consider the soul salvation of both Michael Brown and Darren Wilson (the white police officer who killed Michael Brown, an African-American male), then we must reconsider the quality of our Christianity.

Final Thoughts

My leadership and teaching are grounded in the belief that "true education . . . is the harmonious development of the physical, the mental, and the spiritual powers."³⁶ For me, this means understanding that Christian education is not about institutions alone; instead, it is about Christian educators in every educational context attending to the wholistic needs of individuals. The faith walk is a journey, and each encounter is a priceless opportunity to positively impact someone's faith journey. My responsibility as a Christian educator is to love people, period. Leading with love means that I value relationship over sharing my religion, even as I am an active member of the Adventist Church.

However, I am a Christian first, and I believe that a profound love for humanity, coupled with a love for my subject matter and the power of ideas, must be present in order to teach and lead effectively.³⁷ I concur with Freire that "teaching is an act of love,"³⁸ and I also see credence in McLaren's description of love as "the oxygen of revolution, nourishing the blood . . . [and] spirit of struggle."³⁹

As a non-traditional Christian intellectual and professor in this age of great religious intolerance and legitimate discontent with the status quo, I seek to teach with hope and love for all people.⁴⁰ I refuse to run away from the critical conversations that invariably emerge in classrooms that embrace and consider the big "T's" and little "t's" that students bring with them to class.⁴¹ This is an audacious yet necessary undertaking—both for my students and for me, as a seeker of Truth and walking institution of healing who desires to live out my faith, hope, and pedagogy in authentic, relevant, and liberating ways in these complex times. ☞

This article has been peer reviewed.

Ty-Ron M. O. Douglas, PhD, is Associate Professor in the Department of Educational Leadership and Policy Analysis at the University of Missouri in Columbia, Missouri, U.S.A. He earned his doctorate in Educational Studies/Curriculum and Teaching and a post-Master's Certificate in School Administration from the University of North Carolina at Greensboro, North Carolina, U.S.A.; a Master's degree from the University of Alabama in Huntsville, Alabama, U.S.A.; and a bachelor's degree from Oakwood University in Huntsville, Alabama. Dr. Douglas has taught in K-12 and post-secondary schools in the United States and Bermuda. He has published widely and presented globally.

Recommended citation:

Ty-Ron M. O. Douglas, "Audacity Personified: Leading With Hope, Searching for Truth(s)," *The Journal of Adventist Education* 81:2 (April-June 2019): 38-44.

NOTES AND REFERENCES

1. *Positionality* refers to how one's identity is shaped by the social and political environment, and how identity influences and shapes one's perspective. For more, see <http://sk.sagepub.com/reference/geography/n913.xml>.
2. Several philosophers, from Plato to Rorty, were studied during the 16-week-long semester course.
3. Richard Rorty, *Philosophy and Social Hope* (New York: Penguin Books, 1999), 201-209.
4. Cornel West, *Cornel West Reader* (New York: Basic Civitas Books, 1999), 165-173; 543-544.
5. Sheryl C. Cozart, "When the Spirit Shows Up: An Autoethnography of Spiritual Reconciliation With the Academy," *Educational Studies* 46:2 (April 2010): 250-269. doi: 10.1080/00131941003614929.
6. Plato, *The Republic*, G. M. A. Grube and C. D. C. Reeve, trans. (Indianapolis, Ind.: Hackett Publishing Company, Inc., 1992), 186 (original work written ca. 380 B.C.); Melissa Lane, entry "Philosopher King," *Encyclopedia Britannica*: <https://www.britannica.com/topic/philosopher-king>.
7. Rorty, *Philosophy and Social Hope*, 201-209.
8. *Ibid.*, xxvi, 65.
9. Ellen G. White, *The Great Controversy* (Mountain View, Calif.: Pacific Press, 1911), 523.
10. Merriam Webster Online Dictionary: <https://www.merriam-webster.com/dictionary/philosophy>.
11. White, *The Great Controversy*, 522.
12. Immanuel Kant, *Education* (Ann Arbor, Mich.: The University of Michigan Press, 1960), 70.
13. Fritz Guy, "Can Education Be Both 'Higher' and 'Adventist'?" *The Journal of Adventist Education* 64:4 (April/May 2002): 7.
14. Genesis 3:4, 5. Italics supplied. Unless otherwise indicated, Scripture texts in this article are quoted from the *New King James Version*. Scripture taken from the *New King James Version*®. Copyright © 1982 by Thomas Nelson. Used by permission. All

rights reserved.

15. Plato, *The Republic*, 49.
16. Ellen G. White, *Patriarchs and Prophets* (Mountain View, Calif.: Pacific Press, 1890), 366.
17. Trace E. White, *Scandal of the Universe* (Belleville, Ontario: Essence Publishing, 2000), 16.
18. Rorty, *Philosophy and Social Hope*, 86.
19. *Ibid.*, 204.
20. *Ibid.*, 72.
21. *Ibid.*, 204.
22. *Ibid.*, 201.
23. *Ibid.*
24. Plato's allegory of the cave is a metaphor for the impact education can have on the individual. He describes a group of captives bound together in a cave, their only reality the blank wall in front of them. A fire burns outside of the cave and casts shadows against the wall. What they see is what they believe is real. One captive is freed, and as he enters the area with the fire, his eyes must adjust to new light. Each time he is taken farther away from the cave, his eyes must adjust again. The goal of education, then, is to pull individuals as far away from the cave as possible. For more on this allegory, see "The Allegory of the Cave": <https://faculty.washington.edu/smcohen/320/cave.htm>.
25. Although the source of this quotation has been disputed, it is alleged to have been said by Mahatma Gandhi: <http://www.goodreads.com/quotes/22155-i-like-your-christ-i-do-not-like-your-christians>.
26. Rorty, *Philosophy and Social Hope*, 27.
27. Ty-Ron M. O. Douglas, "Resisting Idol Worship at HBCUs: The Malignity of Materialism, Western Masculinity, and Spiritual Malefaction," *The Urban Review* 44:3 (March 2012): 378-400.
28. Rorty, *Philosophy and Social Hope*, 65.
29. bell hooks, *Teaching to Transgress: Education as the Practice of Freedom* (New York: Routledge, 1994), 19.
30. Stephen Mansfield, *The Faith of Barack Obama* (Nashville, Tenn.: Thomas Nelson, 2008), 1.
31. *Ibid.*
32. Michael Brown, an unarmed 18-year-old African-American teenager, was fatally shot on August 9, 2014, by Darren Wilson, a white police officer in Ferguson, Missouri, U.S.A. Wilson was responding to a reported robbery. Conflicting reports surrounding the circumstances of the shooting set in motion protests and civil unrest in Ferguson and across the nation and opened nationwide debate about the relationship between law enforcement and the African-American community. For more information, see Rachel Clarke and Christopher Lett, "What Happened

When Michael Brown Met Officer Darren Wilson": <http://www.cnn.com/interactive/2014/08/us/ferguson-brown-timeline/>.

33. Current and former staff and students of Andrews University in Berrien Springs, Michigan, U.S.A., prepared and shared a YouTube video that went viral. The video challenged the university administration to address and acknowledge the school's history of race relations, past and present. More information on the #ItIsTimeAU movement can be found at <https://www.andrews.edu/diversity/itistime/>. Both the #ItIsTimeAU Organizing Team and the Andrews University administration have much that is good to offer the broader field of higher education about the power of truth telling and the potential for hope and healing.

34. Pew Research Center, *Political Polarization* (2016): <http://www.pewresearch.org/topics/political-polarization/2016/>. "Alternative facts" is a phrase used by Counselor to the President of the United States Kellyanne Conway during a *Meet the Press* interview on January 22, 2017. The phrase went viral on social media and several media organizations: https://en.wikipedia.org/wiki/Alternative_facts.

35. hooks, *Teaching to Transgress: Education as the Practice of Freedom*, 13.

36. Ellen G. White, *Education* (Mountain View, Calif.: Pacific Press, 1903), 13.

37. Antonia Darder, *Reinventing Paulo Freire: A Pedagogy of Love* (Boulder, Colo.: Westview, 2002), 148; Paulo Freire, *Pedagogy of the City* (New York, Continuum, 1993); hooks, *Teaching to Transgress: Education as the Practice of Freedom*, 13.

38. Darder, *ibid.*

39. Peter McLaren, "Afterword: A Legacy of Hope and Struggle," in Darder, *ibid.*

40. Ty-Ron M. O. Douglas, "What's Radical Love Got to Do With It? Navigating Identity, Pedagogy, and Positionality in Pre-service Education," *International Journal of Critical Pedagogy* 5:3 (2013): 51-82; _____, "Confessions of a Border Crossing Brotha-Scholar: Teaching Race With All of Me." In D. J. Davis and P. Boyer, eds., *Social Justice and Racism in the College Classroom: Perspectives From Different Voices* (Bingley, U.K.: Emerald Publishing Group Ltd., 2013), 55-67.

41. _____. *Border Crossing Brothas: Black Males Navigating Race, Place, and Complex Space* (Bern, Switzerland: Peter Lang Inc., International Academic Publishers, 2016), 187, 188.



Elvis Agard

Using Graphic Organizers to Activate Prior Learning in Mathematics

Student engagement is a common part of most instructional delivery approaches. Teachers know well the lure of high-impact videos, hands-on activities, and charming games—each engineered to create excitement and generate student interest. Graphic organizers are also effective tools teachers can use to help stimulate learners' thinking about prior knowledge while simultaneously evoking interest. Organizers help students engage in reflective practice. As part of reflective practice, teachers can employ graphic organizers to help students make faith connections as they learn.

Engagement Models

The 5E Instructional Model is used to teach science and mathematics. At its core, the model seeks to engage



students in discovery, building on their natural curiosity while strengthening critical thinking and problem-solving skills. The five “E’s” are *Engage, Explore, Explain, Elaborate, and Evaluate*.¹ With “Engagement” being the first stage of the 5E Instructional Model, an unintended consequence arose: Adherents were likely to omit activating prior learning, concentrating only on piquing learner interest.² Its later expansion, the 7E Model, purposed giving equal weight to that easily overlooked step. The solution, which carefully avoided making the second model appear to be a successor to the first, deemed the activation of prior understanding an intimate part of the first stage (*Engage*)³ (see Chart 1).

This drawing out of the student’s academic memory, an almost universally agreed-upon element of effective teaching, is present in learning-process theory, cognitive-development theory, attribution theory, and cognitive perspectives of learning.⁴ Embraced by so many schools of thought, it has become the recognized precursor to introducing new ideas. Why? It prepares the mental framework, the schema—that cognitive structure the mind needs to make sense of new information by relating known ideas to old concepts.

An Internet search reveals many creative strategies for activating this recall. Not a few involve versions of brainstorming, anticipatory guides, collaborative sharing, and the ever-popular, KWL chart (**K**now, **W**ant to Know, **L**earned).⁵ But in my admittedly less-than-exhaustive search, among that family of graphic organizers renowned for its broad application and visual-verbal blending, why should the KWL chart seemingly stand alone as the tool to prod prior knowledge? Or, to orient the question toward our discussion, which graphic organizers specifically address students’ previous learning in mathe-

tics? Since graphic organizers have been used to help both students with limited English proficiency and students with learning disabilities, a branch of graphic organizers that help target each student’s prerequisite capabilities in mathematics will likely address the needs of a broad audience of learners.⁶

In my attempt to create several of these, I established the criteria for the final products using these guidelines:

The organizers would do the following:

- Map the prior skills needed to learn a new topic;
- Relate old problems to new problems;
- Identify previously learned problem-solving steps;
- Include elements of reflective learning; and
- Make a faith-based connection.

I wanted these organizers to be flexible enough to accompany other strategies for stimulating student re-

call, while also doubling as stand-alone tools if needed. Two categories of products will be discussed in this article: organizers for mapping component skills, and organizers for identifying related problems and necessary problem-solving steps.

Mapping Needed Skills

Every mathematics topic has a set of component skills. Students will know some of these, while others will be new to them. Ideally, teachers will want to introduce only one novel skill at a time, thereby establishing a step-wise learning progression that sets a tolerable pace for most learners. In order to identify these skills, the **Identify Component Skills** organizer offers suggestions for creating organizers suitable for the teacher and student, respectively.

Chart 1. 5E and 7E Instructional Model Comparison

5E Instructional Model	7E Instructional Model
Engage Capture learners’ attention through activities, videos, anticipatory sets, etc.	<i>*Elicit – Connect new concepts to prior knowledge and past experiences.</i> Engage
Explore Introduce new concepts and use manipulatives, kits, assignments, teamwork, discussions, etc., to help learners delve into the topic.	Explore
Explain Provide opportunities for learners to communicate and express what the concepts mean.	Explain
Elaborate Present additional information and activities that will allow learners dig deeper for meaning and strengthen their skills.	Elaborate Evaluate
Evaluate Determine whether the concepts have been learned.	<i>*Extend – connect new learning to related concepts or apply concepts to related subjects.</i> <i>*Added to the 7E Model</i>

The Teacher Resource

The **Identify Component Skills** organizer presents an instructor's tool that allows for the mapping of associated prior skills and new skills expected for a specific topic at a particular grade level. One way to do this would be to search preceding standards to identify building blocks relevant to the current topic. For example, adding fractions with like denominators is a precursor to adding fractions with unlike denominators. The foundational standards for these topics may extend across grade levels, or they may be imbedded within previously encountered standards for a single grade level.

Another approach would be to study the steps leading toward solving the new problem, flagging both those that students should already have learned, as well as the new skills to be introduced. Here is one example: Adding fractions with unlike denominators could reveal these prior skills: (a) finding equivalent fractions, (b) reducing fractions to their simplest forms, (c) adding whole numbers, and (d) adding fractions with like denominators. The new skill might be to find the lowest common multiple, or, if that skill has already been mastered, combining all these prior skills in proper sequence to produce the sum.

The Student Resource

The blank student version prompts the learner to brainstorm skills he or she thinks would be useful in solving the new problem. Comparing this process to the imagery of building a brick wall, it becomes clear that knowledge builds on itself, brick by brick. Because these strategies are used in tandem with cooperative learning and sharing strategies, the teacher does not intervene in the brainstorming but rather encourages teams of students to provide reasons for their choices.

Relating Old Problems to New

The three types of organizers discussed below can be used to help

learners activate prior knowledge by revealing what they already know about a topic. Teachers can use these approaches to help learners relate old (previously learned) strategies for problem-solving to new ones. They can also be used to help identify and correct misconceptions.

1. "Six Things I Think I Know" Organizers

Having learners reveal what they think they know about a topic is the first part of a KWL chart. The graphic organizers titled **Six Things I Think I Know** ask students to tell what they know about a problem, whether that means relating the problem to a related previously studied topic, or sharing a fact relating to the new topic. Because these organizers are specifically tailored for mathematics instruction, they include prompts to draw pictures of what the problem looks like, describe the problem's component parts, suggest a real-world context for the problem, and show how to solve the problem.

2. "Reminds Me of" Organizers

Often, but not always, new problems look strikingly similar to old counterparts except for a singular twist; thus, they are also solved similarly except for a singular twist. Exploiting this as a learning advantage is the purpose of the **Reminds Me of . . .** organizers.

Consider, for example, the new problem, $-\frac{1}{3} + \frac{2}{5}$. The student might list the related old problems as $\frac{1}{3} + \frac{2}{5}$, $-1 + 2$, or $-3 + 5$. If the teacher provides additional prompts to encourage the students to solve the old problems they identify, he or she can identify possible misconceptions in the problem-solving steps that might be replicated when students solve the new problem. Addressing misconceptions is crucial to the learning process, since prior knowledge may include application errors that can impede the student's ability to move forward with new learning.

Conditionally, if students show proficiency in the old steps, this mode of engagement has the corollary benefit of relating so closely to the *Explain* stage of the learning cycle (where the student receives direct how-to instruction) that it can maximize the time available to learn the newly introduced problem-solving step. The significant difference between these stages is the limit on

The three types of organizers discussed here can be used to help learners activate prior knowledge by targeting what they already know about a topic. Teachers can use these approaches to help learners relate old (previously learned) strategies for problem-solving to new ones.

teacher intervention. When done in groups, it is the students who collaboratively clarify the steps as they share knowledge; the teacher facilitates the engagement and records misconceptions for later clarification.

3. "U Should Know" Organizers

By showing how to relate old problems to new ones, we have already seen how to identify students' knowledge of previously learned problem-solving steps. The

approach above, however, relies heavily on each student's ability to perceive the connections, a feat possible only because the problems are visual twins. It will not always be obvious to the learner what prior knowledge he or she might need to solve a new problem.

Consider, for example, the problem, $\frac{3}{4} + \frac{6}{15}$. Seen for the first time, it does reveal the need to reduce $\frac{3}{15}$ and $\frac{6}{4}$ to their respective simplest forms. The use of the distributive property to generate rules for multiplying integers is an even more obscure example. It will likely not be apparent that the new problem, $3x(-2)$ is related to $3(5-2)$ from which

we develop the rule, "a positive multiplied by a negative yields a negative." For these, the expected prior learning would have to be made explicit. The **U Should Know** organizers permit the teacher to give that direction, then step back to observe students' approaches to solving old problems, recording misconceptions to address at a later time.

Reflective Learning

As students interact with the graphic organizers, instructors will want them to monitor their own experience so that the *meaning* of what they did becomes the topic of discussion.⁷ If teachers accept that recall is the motif of each organizer, it becomes reasonable to have the stu-

dents reflect on what they have recalled. For this reason, each organizer includes two prompts: "Here's what I do well:" and "I still struggle with. . . ." This provides valuable qualitative data not only for the student, but also for the teacher.

Integration of Faith and Learning

Reflective learning also extends to creating opportunities for students to reflect on and recall God's Word. When it comes to seeking opportunities to integrate the Word of God, Christian teachers are rarely shy. Their ability to use curriculum as the vehicle to carry out this biblical mandate (Deuteronomy 6:6, 7) is the distinguishing feature of the Adventist

Table 1. Five Approaches for Choosing Bible Texts That Connect With Mathematics

Approach	Example	Comment
1. Offer encouragement.	Always give of your best (Ecclesiastes 9:10).	This Scripture selection is not topic-related and can be used as a default when it's difficult to find a direct math-Bible connection. However, it is to be followed by a discussion of why this is important.
2. Reference the topic's use.	Topic: Counting. Can you count the stars? (see Genesis 15:5). Topic: Multiplying.	Search for biblical instances when someone counted, calculated area or volume, etc.; discuss why to make a Jesus connection.
3. Do a word play or study.	"What might multiply mean in the context of Deuteronomy 8:13?"	Search for biblical instances of the word that might have either a different meaning or the same meaning; discuss how to make a faith connection.
4. Make an application.	Topic: Finding Volume. Calculate the volume of the ark of the covenant (Exodus 37:1)."	The students use the mathematics they learn to solve problems or explore phenomena present in the Bible. Discuss the phenomenon itself to make a faith connection.
5. Make an analogy or other figurative connection.	Topic: Commutative Property. Just as the commutative property allows numbers to switch places, Jesus switched places with us, taking our sin, giving us His righteousness. (2 Corinthians 5:21).	Especially as the mathematics becomes more complex, this can be a most useful tool. Jesus used it extensively when telling parables. It is particularly useful for the middle- and upper-grade students, who need to be able to grapple with figurative language.

ministry of education. Any document presented to a learner occasions the opportunity to integrate principles from the Bible. But many teachers wonder how to choose a text or passage of Scripture that relates to a mathematical topic. Table 1 offers five approaches. The choice of an approach should be guided by the goals of delivering an organic connection, one that is unforced because it easily relates to the topic at hand, using it in a way that provides insight into God's character or the plan of salvation.

Each graphic organizer concludes with a Bible text (which can be repeated for emphasis), and these texts can be presented in a variety of formats. They can be partnered with a teaser question, a fill-in-the-blanks prompt, a puzzle, or other creative approaches. The key is to stay within the mode of engagement, stirring wonder and interest in an age-appropriate manner

Conclusion

Getting students to reflect on how their faith relates to their learning is not limited to mathematics instruction; the methods described here can be adapted to graphic organizers of any content area. But mathematics instruction, having its own nuanced requirements, can benefit from organizers that relate old problems to new ones, assess how well students understand previously learned problem-solving steps, and that map the component skills necessary to learn a new topic. Teachers of mathematics are encouraged to use and adapt these tools to assess their usefulness and ultimately to create their own (blank versions are included at this [link](#)). Whatever we do, it is crucial that we do not skip the stage of the learning cycle that accesses prior understanding but instead, view it as part of the engagement process. ✍

This article has been peer reviewed.

Elvis Agard, MA, teaches Grades 6-8 at Berean Christian Junior Academy in Atlanta, Georgia, U.S.A. Mr. Agard has more than 20 years of experience in public and Christian education. He has taught in Barbados and the United States (Grades 3-12 and adult education) and has served as an administrator (principal and vice principal), and as a member of school- and district-level boards of education. Mr. Agard holds a Bachelor of Science in Mathematics and Computer Science from The University of the West Indies (Cave Hill, Barbados), and a Master of Arts in Educational Leadership and Administration from Andrews University (Berrien Springs, Michigan, U.S.A.). His areas of research interest include creating resources that close the gap between faith, learning, and achievement; and providing teachers with the tools to do the same.

Recommended citation:

Elvis Agard, "Using Graphic Organizers to Activate Prior Learning in Mathematics," *The Journal of Adventist Education* 81:2 (April-June 2019): 45-49.

NOTES AND REFERENCES

1. Lakeena Chitman-Booker and Kathleen Kopp, "The 5Es of Inquiry-based Science: Professional Resources for K-12 Teachers" (Huntington Beach, Calif.: Shell Education, 2013): 9, 10; Milwaukee School of Engineering, "Summary of the 5E Instructional Model" (n.d.): <http://cbm.msos.edu/teacherWorkshops/mspResources/documents/day1/5eSummary.pdf>.
2. Kimberly D. Tanner, "Order Matters: Using the 5E Model to Align Teaching With How People Learn," *CBE Life Sciences Education* 9:3 (Fall 2010): 159-164. doi: 10.1187/cbe.10-06-0082.
3. Arthur Eisenkraft, "Expanding the 5E Model," *The Science Teacher* 70:6 (September 2003): 56-59: <http://emp.byui.edu/firestonel/bio405/readings/learning%20models/expanding%205e.pdf>.

4. Margaret E. Gredler, *Learning and Instruction: Theory Into Practice*, 6th ed. (New York: Pearson, 2008).

5. Rebecca Alber, "Are You Tapping Into Prior Knowledge Often Enough in Your Classroom?" *Edutopia* (July 2011): <https://www.edutopia.org/blog/prior-knowledge-tapping-into-often-classroom-rebecca-alber>; Jennifer Gonzalez, "Retrieval Practice: The Most Powerful Learning Strategy You're Not Using," *Cult of Pedagogy* (September 2017): <https://www.cultofpedagogy.com/retrieval-practice/>.

6. Sara LaJeunesse, "Graphic Organizers Aid Students With Learning Disabilities," PennState College of Education (December 2011): <https://ed.psu.edu/news/news-items-oct-dec-2011/graphic-organizers-aid-students-with-learning-disabilities.html>; Kara Wyman, "To Help English Learners, You Need Ways to Reduce Their Affective Filter," A Blog by Concordia University, Portland, Oregon (February 2017): <https://education.cu-portland.edu/blog/classroom-resources/affective-filter-english-learners/>; Jennifer Gonzalez, "The Great and Powerful Graphic Organizer," *Cult of Pedagogy* (October 2017): <https://www.cultofpedagogy.com/graphic-organizer/>; Douglas D. Dexter, Youn J. Park, and Charles A. Hughes, "A Meta-Analytic Review of Graphic Organizers and Science Instruction for Adolescents with Learning Disabilities: Implications for the Intermediate and Secondary Science Classroom," *Learning Disabilities Research and Practice* 26:4 (November 2011): 204-213. doi.org/10.1111/j.1540-5826.2011.00341.x.

7. Arthur L. Costa and Bena Kallick, eds., "Learning Through Reflection," in *Learning and Leading With Habits of Mind: 16 Essential Characteristics For Success* (Alexandria, Va.: ASCD, 2008), 221-235: <http://www.ascd.org/publications/books/108008/chapters/Learning-Through-Reflection.aspx>.



ADVENTIST LEARNING
COMMUNITY

*Empowering people with the **passion**
and **skills** necessary to further the
kingdom of Christ **in the 21st century!***

Create an account in 5 easy steps:

1. Go to the ALC website
www.adventistlearningcommunity.com
2. Click on the sign-up button
3. Choose your account type
4. Fill in the information as prompted
5. Click submit

You're ready to log in and get started!

FREE

Online courses
& Resources for
Pastors, Teachers,
Administrators and
Believers & Seekers

Course subjects:

- Theology
- Education
- Lay Ministries
- Youth Ministry
- Health & Wellness
- Human Resources
- Education Curriculum
- Community Services
- Fund Raising
- Social Media
- Young Adult Ministry
- CALLED Convention

WWW.ADVENTISTLEARNINGCOMMUNITY.COM

Other subjects taught included history, music, and poetry. Second, the learners, regardless of class and financial ability, were required to practice manual labor with the double purpose of financing their expenses and learning skills that would make them fully autonomous. Third, students learned how to pray and practiced devotion; they learned how to approach their Creator. And fourth, faith, central to the whole educational program, directed students toward the Lamb of God—the one who takes away the sins of the world.⁸

How do we, then, utilize this foundational example to define and carry out our educational mission? First, we need to develop curricula for subject areas that address real, current needs, with the Bible at the core, so that students can make adjustments and contribute to contemporary society. Curricula should not only be produced from a pragmatic criterion, but should also consider aesthetics (poetry, music, art, etc.) and axiology (focus on the truly important values as inspired by the Bible) in accordance with the Adventist philosophy of education. Second, students must become skillful in multiple practical and manual skills relevant to current settings, like planting organically, using electronic devices to preach the gospel, acquiring contemporary life-skills, or becoming an everyday media critic—someone who can access and critically analyze and evaluate media (e.g., Websites, news sources and outlets, and social media in all its forms). This will provide both learning experiences and more than one way for them to support themselves while enrolled in formal education. Third, a deep and meaningful relationship with God is to be the center of our educational programs. This may mean going beyond the traditional didactic approach to presenting devotionals and spiritual experiences using participatory methodology to guide young people into a better relationship with God.

This current issue of the JOURNAL offers a set of articles that represent the effort of contemporizing and applying traditional Adventist principles to the reality and demands of the 21st century. Dovich offers advice on how to bridge faith and technology in our schools and colleges, while reminding us that each vocation is a gift from God. Douglas discusses ways to display hope and preserve the big truths while performing leadership roles in a postmodern society. Doukmetzian and Doukmetzian discuss effective governance and address the legal and fiduciary duties of boards. Martin and Conneen describe varied attitudes toward vaccinations and provide administrators with suggestions for meeting the needs of all students while navigating the different perspectives. Villafior-Almocera suggests ways to monitor quality fieldwork in online education, and Neria de Giarate describes one university's approach to mentoring non-traditional students. In the final article, Agard offers

practical suggestions for using graphic organizers to help students activate prior learning, engage in reflection, and build faith connections in math.

These topics would have had little relevance a hundred years ago, yet they are necessary today, and this issue presents them with the principles of Adventist Christian education in mind. Faith must be central across the whole educational program; as educators, we must strive to use every means necessary to integrate faith into all teaching and learning experiences, making God's principles foundational to any educational effort. In sum, we need to be constantly alert to preserve our ideals and philosophy, but do so in meaningful ways to avoid becoming startled by change that makes us cry out in desperation: "Who moved my cheese?"

Julián Melgosa, PhD, is Associate Director of Education for the General Conference of Seventh-day Adventists in Silver Spring, Maryland, U.S.A. He serves as Liaison for Higher Education and Advisor for the North American, South American, and Trans-European divisions. Dr. Melgosa also serves as the Associate Editor for The Journal of Adventist Education (International Editions).

Recommended citation:

Julián Melgosa, "Beyond the Maze: Principles for Adventist Education in a Changing World," *The Journal of Adventist Education* 81:2 (April-June 2019): 3, 51.

NOTES AND REFERENCES

1. Spencer Johnson, *Who Moved My Cheese?: An A-Mazing Way to Deal With Change in Your Work and in Your Life* (New York: G. P. Putnam and Sons, 1998).
2. Floyd Greenleaf wrote a two-part article on the nature of change in Adventist education. To read more about this topic, see Floyd Greenleaf, "Has the Leopard Changed Its Spots? A Commentary on Purpose, Principle, and Change in Adventist Education," Part I, *The Journal of Adventist Education* 68:5 (April/May 2006): 5-14; and _____, "A Commentary on Purpose, Principle, and Change in Adventist Education," Part II, *ibid.* 69:1 (October/November 2006): 4-13.
3. Ellen G. White, *Fundamentals of Christian Education* (Nashville, Tenn.: Southern Publ. Assn., 1923), 489.
4. See also _____, *Counsels to Parents, Teachers, and Students* (Mountain View, Calif.: Pacific Press, 1913), 252, 548, 549; _____, *Patriarchs and Prophets* (Washington, D.C.: Review and Herald, 1890), 592-596.
5. White, *Education* (Mountain View, Calif.: Pacific Press, 1903), 46.
6. *Ibid.*
7. 2 Kings 2:3. *New International Version* (NIV). Holy Bible, *New International Version*®, NIV® Copyright © 1973, 1978, 1984, 2011 by Biblica, Inc.® Used by permission. All rights reserved worldwide.
8. White, *Education*, 47.

Free Tools

Peer-reviewed,
informational
& practical
articles, plus
NEW free App!

THE JOURNAL OF
**ADVENTIST
EDUCATION**
jae.adventist.org

Curriculum
& Instruction
Resource
Center
Linking
Educators

 **circle**
cicle.adventist.org

Inspiring,
inclusive,
interactive
how-to blog
for you!

Seventh-day
**Adventist
Educators**
educators.adventist.org

The Journal of Adventist Education® is the award-winning professional journal for Adventist educators and everyone interested in Christian education. We've partnered with CIRCLE and the Adventist Educators Blog to provide you with access to FREE resources for your teacher's toolbox – kindergarten through graduate-level education.

We're here for you!

facebook.com/educationdialogue/