BIBLICAL TEXT MESSAGES:

THE EFFECT OF BIBLE SOFTWARE ON SEMINARY STUDENTS

BY

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ABSTRACT

Practitioners of media ecology study the powerful influence media exert on human perception. Research has discovered that digital technologies, such as computers and smart phones, interact with the plasticity of the human brain. The mind itself, as the essential tool of students preparing to be pastors, is so obvious as to be overlooked. This study reveals the dramatic impact on students' minds that results from heavy use of digital technology, especially Bible software. These students are becoming increasingly distracted thinkers. The finding of this study is that their conversation with Biblical texts is being reduced to an exchange of disjointed Biblical observations, "Biblical text messages," so to speak. This thesis explores these cognitive effects of digital technology on seminary students, with a special focus on *Logos* Bible software.

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INTRODUCTION

At a recent evangelism presentation, a pastor shared different practical activities a church can do to create a good reputation in the community. These activities could take considerable effort and time—which prompted a student to ask, "In a busy ministry, even if the pastor can muster the effort, where can he find the time?" The presenter answered, "Oh, well, with all the technology we have these days, you can crank out a good a sermon in only 10 hours or so, so that leaves plenty of time."

Behind that answer was this premise: It is wise to use technology to decrease the time and effort involved in faithful sermon preparation so you can use your time and effort for things that cannot be done by technology. The *intention* of the presenter was good; he was trying to find the time in a busy ministry for activities that lead to evangelism opportunities. Was the *premise* to his answer good? Should a pastor or pastoral candidate use technology to decrease the time and effort involved in faithful sermon preparation? I doubt the presenter, or many of his listeners, even paused to ask that question. This paper aims to do so.

I began to ask a similar question when I served as Hebrew instructor at Martin Luther College (MLC) during the '16—'17 school year. In 2nd year Hebrew, the seniors had the privilege of carrying out exegesis (in depth study of the original language) of the book of Ruth. I enjoyed this class immensely. One of the main reasons I enjoyed it so much was the interaction with my students. Within their personalities and talents each student contributed their unique insights, reacted to and built on each other's comments, and wrestled with questions of

interpretation. In addition, they enjoyed being in class (if their student course reviews can be trusted). If it sounds like any exegesis class should be like this, I would agree. So why was I so thrilled with this class in particular? Because I had rarely experienced exegesis classes like this during my time at the Seminary.

Like any class of students studying for the ministry, those students had different levels of language talent and diverse personalities. The material, God's Word in the original language, was the same material studied at Wisconsin Lutheran Seminary (WLS). However, when comparing exegesis class at the Seminary to exegesis class at MLC, the presence of technology stood out as the significant variable. Starting with their first day at the Seminary, students are expected to have a laptop in class and to make use of the Bible software *Logos.* This is the case in exegesis classes in particular. Using the powerful tools of *Logos*, students are supposed to be able to take the next step in exegesis, building on the foundation of the skills acquired at MLC, reaping ever greater insights into the meaning of the text with greater speed and taking helpful notes for the future. *Logos* does offer many helpful tools for text study, but the difference in exegesis class experience with and without it prompted the following research question: **What cognitive affects does the presence of technology, particularly the Bible software *Logos*, have on students at Wisconsin Lutheran Seminary?**

RESEARCH METHODS

I researched this question using two methods. First, I conducted several interviews with recently graduated Seminary students to examine how their experience lined up with current research on the effects of digital technology. The participants were assured that they would remain

anonymous and have been given the opportunity to review how they have been quoted and to make changes in the wording or remove quotes from the paper altogether. Second, five Juniors (first-year students) at WLS agreed to function as a focus group. They spent one week without consciously managing their technology use in exegesis class and during their homework. They spent the next week managing their technology use according to some general guidelines. During both weeks, they took note of their class and homework experience. At the end, they wrote a short summary of their impressions.

LITERATURE REVIEW

The Debate Over Technology

One broad definition of technology is "a tool used by people." Technology can be as simple as a hammer and as complicated as a telephone. As often as a new technology is invented, an opportunity arises for people to debate whether this technology is "good" or "bad." Take the example of the smart phone. One person might say, "Smart phones are good; it lets me talk to my son even though he moved far away." Another person might say, "Smart phones are bad; my son moved far away because he knew he could always reach me with his phone."

The way people view a technology often depends on when in their life-time the particular tool was invented. As Douglas Adams, author of *Hitchhiker's Guide to the Galaxy* puts it,

> First, 'everything that's already in the world when you're born is just normal.' Then, 'anything that gets invented between then and before you turn thirty is incredibly exciting and creative and with any luck you can make a career out of it.' Finally, 'anything that gets invented after you're thirty is against the natural order of things and the beginning of

> the end of civilization as we know it until it's been around for about ten years when it gradually turns out to be alright really.[1]

Douglas Adams argues that most technology, though initially greeted by skepticism, turns out "to be alright really" in the minds of average people after it has been around for a while. Communicative technology, technology that transmits messages through words or pictures (such as the television, the computer, and the internet) has gone through this cycle as well. While many people were initially skeptical of the benefits of these tools, people now take for granted that they are harmless and helpful and have assimilated them into their daily lives. In 2015, 73% of US adults owned a computer and 68% owned a smartphone, including 86% of those between the ages of 18-29.[2] As John Dyer put it, "Not a single one of these devices or behaviors existed just over a century ago, and yet all of us treat them as if they are as normal as the water we drink or the air we breathe."[3] The debate on whether these digital technologies are "good or bad" seems to be over, and the few who try to carry it on are labeled as "Luddites" and dismissed with a statement such as "the technology itself isn't good or bad, it is how we use it that matters."[4]

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1. Quoted in John Dyer, *From the Garden to the City: The Redeeming Power of Technology* (Grand Rapids: Kregel, 2011), 26. Quote originally from Douglas Adams, "How to Stop Worrying and Learn to Love the Internet," 1 September 1999, http://www.douglasadams.com/dna/19990901-00-a.html (website now defunct).

2. Monica Anderson, "Technology Device Ownership: 2015," *Pew Research Center,* 29 October 2015, http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015/.

3. Dyer, 22.

4. Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brain,* (New York: W.W. Norton, 2011), 5.

Communicative Technology and the Renewed Debate

To renew the debate over technology, the technology in question needs to be specified. Communicative technology has often been lumped together with tools like hammers and rakes, tools that are rightly considered neutral unless they are abused. The impact of most technologies, however, is not that one-dimensional. The air conditioner, for example, exerts an influence beyond cooling people's homes. A society with air conditioners will find more people in the comfort of their homes rather than out on the porch during a hot summer, resulting in neighborhoods where people do not interact with their neighbors and where new houses are built without porches.[5] In just this way, several 20th century thinkers believed the debate over communicative technologies was one worth having.

In the 1960s, University of Toronto English professor Marshall McLuhan published *Understanding Media*. In his book, he suggested that media, in particular communicative technologies such as the alphabet and telegraph, have changed the mental environment of the world. Media cannot be viewed as tools that only affect the world depending on how they are used (i.e. "guns are neutral, it is how they are used that matters"). With the phrase, "the medium is the message," McLuhan argues that regardless of how they are used, media themselves exert a powerful influence that affects the environment in which people live, often without their knowledge. Just as the mere presence of pollution can affect the natural environment, the presence of media affect the "symbolic environment—the socially constructed, sensory world of

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5. Rebecca J. Rosen, "Keepin' It Cool: How the Air Conditioner Made Modern America," *The Atlantic,* 14 July 2011, https://www.theatlantic.com/technology/archive/2011/07/keepin-it-cool-how-the-air-conditioner-made-modern-america/241892/ .

meanings that in turn shapes our perceptions, experiences, attitudes and behavior."[6] McLuhan's primary goal was not to label technologies "good" or "bad," but for people to be aware of the effects of their presence.

McLuhan's theory has developed into an area of study known as media ecology. Media ecology's fundamental principle is to treat media as petri dishes. "A medium is a technology within which a culture grows; that is to say, it gives form to a culture's politics, social organization, and habitual ways of thinking."[7] In 16th century Germany, few people may have considered that the technology of moving type itself, apart from the content it was helping to print, was leading to standardization of the way they wrote and spoke the German language and that it was fostering a culture in which nationalism could grow. New technologies have the potential to create new mental environments and cultures of thought.

Neil Postman, founder of the Media Ecology program at New York University and a devotee of McLuhan, took his theory a step further. As opposed to McLuhan, he claimed that not only did communicative technology create certain environments, but he also claimed that people *should* consider whether those environments were "beneficial or destructive for those immersed in them."[8] While he considered technologies to create both blessings and burdens, he believed the blessings are most often emphasized while the burdens are ignored.[9]

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6. Em Griffin, *A First Look at Communication Theory* (New York: McGraw-Hill Education, 2011), 321.

7. Postman, Neil. "The Humanism of Media Ecology." Keynote address delivered at Fordham University, New York, June 16-17, 2000, http://www.media-ecology.org/publications/MEA_proceedings/v1/humanism_of_media_ecology.html.

8. As summarized in Griffin, 328.

9. Postman, Neil. *Technopoly* (New York: Knopf, 1992), 4-5.

One of the technologies he focused on was the television. To Postman (writing in 1985), "every technology has an inherent bias,"[10] and the television's inherent bias ended the 18th and 19th century "golden age" of American literacy and quality thinking by fostering an environment of entertainment.[11] Television affected many different areas of life. Preachers aimed to deliver more entertaining messages, but in changing the delivery, they ended up changing the message.[12] Using the transition words, "Now…this," newscasts moved between murders and politics, between catastrophes and sports—all in the span of 60 seconds—and in so doing created a world which "has no order or meaning and is not to be taken seriously."[13] Sesame Street aimed to help children learn to read and to love school, but it resulted in encouraging "children to love school only if school is like 'Sesame Street.'"[14]

The Inherent Bias of Computer Technology toward Information

If the television had an inherent bias toward entertainment, then the computer had an inherent bias toward information. While a blessing of the computer was its capacity to quickly access and analyze large amounts of information, its burden was that people began to believe that information is the solution to most of the serious problems of day to day life.[15] Postman's comments about the computer in 1992 seem to be talking about the current age of Google and

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10. Postman, Neil. *Amusing Ourselves to Death* (New York: Viking, 1985), 84.
11. *Ibid*, 61 and 63.
12. *Ibid*, 118.
13. *Ibid*, 99.
14. *Ibid*, 43
15. Postman, *Technopoly*, 119.

faith in statistics and numbers: "I am constantly amazed at how obediently people accept explanations that begin with the words 'The computer shows…' or 'The computer has determined…' It is Technopoly's[16] equivalent of the sentence 'It is God's will,' and the effect is roughly the same."[17]

The medium of the computer communicates that the computer's way of "thinking," by impartially and quickly analyzing large amounts of data, is the best way of thinking. When left unchecked and undebated, this message creates a mental environment that is biased toward that type of thinking. In such an environment, people believe that humans are at their best when thinking this way too.

> Among the implications of these beliefs is a loss of confidence in human judgment and subjectivity. We have devalued the singular human capacity to see things whole in all their psychic, emotional and moral dimensions, and we have replaced this with faith in the powers of technical calculation.[18]

This devaluing of the uniquely human capacity for deep thinking goes against one of the original goals of computer technology. "It was the dream of early computer scientists to have machines do the fast and routine work so that the slow and creative work could be done by people."[19] Sherry Turkle, professor of the Social Studies of Science and Technology at the Massachusetts Institute of Technology, laments that "the opposite may have happened. Machines present us with information at a volume and velocity that we try, unsuccessfully, to keep up with.

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16. Prof. Postman's name for a society in which culture has "surrendered" to technology.

17. Postman, *Technopoly*, 115.

18. *Ibid*, 118.

19. Sherry Turkle, *Reclaiming Conversation*: *The Power of Talk in a Digital Age* (New York: Penguin Press, 2015), 76.

But we try. And the effort means that we are often so busy communicating that we don't have time to think."[20]

When people put blind trust in information and do not add human judgment and analysis, a wealth of information can even be harmful. The Harvard Business Review explains how this can affect companies. "At this very moment, there's an odds-on chance that someone in your organization is making a poor decision on the basis of information that was enormously expensive to collect."[21] More importantly, an overabundance of information can actually cause people to be less likely to apply good judgment to information.

The Effects of Information Overload on the Brain

In 2014, a group of scientists asked people simply to be bored. The subjects sat in a room with nothing to do. They were alone except for a device that would give them an electric shock. On average, the subjects would be so bored after six minutes that they would shock themselves simply to stave off that boredom.[22] The researchers concluded that a constant flow of information has led people to be afraid of being alone and afraid of being without their constant dopamine-inducing flow of information. In other words, it was physically difficult for them to be bored.

Recent research into neuroplasticity, the ability of the brain to rewire itself, reveals that the more this trade-off is made—more information and less deep thinking—the less it becomes a

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20. Turkle, 76.

21. Schventank Shah, Andrew Horne, and Jaime Capellá. "Good Data Won't Guarantee Good Decisions," *Harvard Business Review,* April 2012, https://hbr.org/2012/04/good-data-wont-guarantee-good-decisions.

22. Timothy D. Wilson et al. "Just Think: The Challenges of the Disengaged Mind," *Science* 345, no. 6192 (2014): 75-77, http://wjh-www.harvard.edu/~dtg/WILSON%20ET%20AL%202014.pdf.

preference people can turn off and on when they want. According to scientists Jeffrey M. Schwartz and Sharon Begley, "The life we lead… leaves its mark in the form of enduring changes in the complex circuitry of the brain—footprints of the experiences we have had, the actions we have taken."[23] Nicholas Carr, author of several books on the effects of modern technology and its effects, put it this way:

> [W]hat the Net seems to be doing is chipping away my capacity for concentration and contemplation. Whether I'm online or not, my mind now expects to take in information the way the Net distributes it: in a swiftly moving stream of jet particles. Once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski.[24]

Carr was experiencing an actual physical change in the way his brain worked. This does not mean that he was incapable of deep thinking. He had realized, however, that his brain now favored "zipping along the surface" of information instead of diving into it.

The underlying message of computer technology is "more information is better." If people allow their lives to be governed by that message, then they *should* fill their quiet moments with Google-searching, messages, news, and notifications. Through gradual change their brains will be "optimized"[25] to favor that kind of thinking. Sharon Begley agrees with Nicholas Carr that these changes come at a price: a constant flood of information does actually make it more

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23. Jeffrey Schwartz and Sharon Begley, *The Mind and the Brain and the Power of Mental Force* (New York: Regan Books, 2002), 366.

24. Carr, *The Shallows*, 7.

25. The words our culture uses to describe our brains, like "hard drive" and "processing" and "optimization" show that we have absorbed a computer bias. We view our brains as computers instead of the far more complicated organs that they are, and we judge our brains based on how well or quickly they perform tasks that a computer can do. Cf. a January 2015 New York Times article by Gary Marcus, "Face It, Your Brain Is a Computer."

difficult for the brain to think deeply.[26] [27] According to Sherry Turkle, this skill is vital: "[T]he experience of boredom is directly linked to creativity and innovation… If we remain curious about our boredom, we can use it as a moment to step back and make a new connection."[28] John Dyer contrasts 'computer-thinking' from deep thinking in this way, "With equal access to all of the world's information, we tend to cultivate that skill of searching for and accessing information rather than acquiring information, committing it to memory, and allowing it to shape our minds and hearts."[29]

The environment created by computer technology encourages certain mental tendencies. This bias affects how the brain ingests information, handles boredom, and makes creative connections—all processes involved in deep thinking. One situation where the side-effects of this environment appear most is in the classroom.

Prominent Side Effects in the Classroom: Distraction and "Multi-tasking"

Classrooms around the country make use of computer technology, and this technology has great potential for improving the classroom experience. Recent research, however, also documents a range of negative outcomes. In addition to the previously mentioned effects on the brain (and

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26. Sharon Begley, "I Can't Think!" http://www.sharonlbegley.com/the-science-of-making-decisions.

27. Leo Marx gives a helpful illustration of the distracting effects of technology in his book *The Machine in the Garden*. He uses the example of a train disrupting the deep thinking of Nathaniel Hawthorne. "The locomotive, associated with fire, smoke, speed, iron, and noise, is the leading symbol of the new industrial power. It appears in the woods, suddenly shattering the harmony of the green hollow… The noise of the train, as Hawthorne describes it, is a cause of alienation in the root sense of the word: it makes inaudible the pleasing sounds to which he had been attending, and so it estranges him from the immediate source of meaning and value in Sleepy Hollow." *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York: Oxford University Press, 2000), 27.

28. Turkle, 39.

29. Dyer, 163.

partially because of these effects), the environment created by computer technology decreases attention and fosters multi-tasking. These together prevent students from reading and learning to their full potential.

Naomi Baron, professor of linguistics at American University, researched how the simple act of reading on a screen affects the attitudes of readers and their comprehension level. She argues that "[s]creens hasten us along. Print invites us to linger."[30] Students associate print with high-quality work, while using online sources is "invariably associated with the need to just get things done quickly and easily."[31] 92% of American students in a 2013 study said they concentrate best when reading in hardcopy, as opposed to a screen.[32] One study shows that people physically read in a different way when reading onscreen. In print, readers' eyes track from one word to the next; onscreen their eyes move in an "F" pattern, reading the first line in its entirety, the next halfway, and then skimming the first word of each line after that for pertinent information.[33]

Hyperlinks (in-text links which send readers to additional information, articles, or web pages) are intended to deepen reading by providing mental connections.[34] One study, however, revealed that when one group of people read a short story with hyperlinks and another group read

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30. Naomi Baron, *Words Onscreen: The Fate of Reading in the Digital World* (New York: Oxford University Press, 2015), 152.

31. Juris Dilevko and Lisa Gottlieb, "Print Sources in an Electronic Age: A Vital Part of the Research Process for Undergraduate Students," *Journal of Academic Librarianship* 28, no 6:392, http://www.moyak.com/papers/print-sources-undergraduate.pdf.

32. Baron, 181.

33. David Daniel and Krisztina Jakobsen, "E-textbooks Effectiveness Studied," *Department of Psychology at James Madison University*, January 2016, http://www.psyc.jmu.edu/undergraduate/features/etextbooks.html.

34. David S. Miall and Theresa Dobson, "Reading Hypertext and the Experience of Literature," *Journal of Digital Information 2:1* (2012). https://journals.tdl.org/jodi/index.php/jodi/article/view/35/37

without those links, the hyperlinks did not have the intended effect. The group with hyperlinks took longer to read the story, and three out of four had difficulty understanding the text, while only one in ten of the group without links reported similar difficulties.[35] In another study, the more the links in the text increased, the more comprehension declined.[36] Carr concludes:

> With writing on the screen, we're still able to decode text quickly—we read, if anything, faster than ever—but we're no longer guided toward a deep, personally constructed understanding of the text's connotations. Instead, we're hurried off toward another bit of related information, and then another, and another. The strip-mining of "relevant content" replaces the slow excavation of meaning.[37]

Because digital technology continually hurries the user off toward more information, users often turn to multi-tasking to handle it all. While the previously mentioned study of American students in 2013 showed that 74% of students "occasionally" or "never" multitask when reading in print, those same students multitask 85% of the time when working on a digital screen.[38] Several web pages or programs are often open at once, and frequent notifications pop up on the screen, but the multitasker believes he can absorb and interact with this flood of information efficiently by doing more than one activity at once. To maximize class time, he can take notes on what the professor is saying *while* responding to this urgent email *and* Googling where he wants to eat later that night.

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35. *Ibid.*

36. Zhu Erping "Hypermedia Interface Design: The Effects of Number of Links and Granularity of Nodes." *Journal of Educational Multimedia and Hypermedia*, 8, no 3 (1999): 331-58

37. Carr, *The Shallows,* 166.

38. Baron, 88-89.

"Successful" multitasking, however, is a myth.[39] Unless particular students happen to be in the 2.5% of the population who are good at multitasking ("supertaskers"), they are not increasing their efficiency at all.[40] In a 2006 study, two groups of college students performed a reading comprehension task. One group was asked to answer text messages first, then to do the task, while the other group was asked to answer the text messages throughout their reading activity. The second group took significantly longer to complete the tasks.[41] Few people, however, believe that they are poor multi-taskers. Citing research from Dr. Carrie B. Fried, professor of education at Winona University, Sherry Turkle says:

> When we think we are multitasking, our brains are actually moving quickly from one thing to the next, and our performance degrades for each new task we add to the mix. Multitasking gives us a neurochemical high so we think we are doing better and better when actually we are doing worse and worse... The myth of multitasking is just that: a myth.[42]

The rapid switching between tasks involved in multi-tasking rarely involves a rapid switch in focus. The average time it takes for someone to fully refocus on the task at hand after being distracted is 23 minutes.[43] These long detours of distractions provided by stream of

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39. See Rey Dismukes, Loukia Loukopoulos, and Immanuel Barshi, *The Multitasking Myth: Handling Complexity in Real World Operations* (Burlington, Ashgate, 2009).

40. J.M. Watson and D.L. Strayer "Supertaskers: Profiles in Extraordinary Multitasking Ability." *Psychonomic Bulletin & Review* 17, 4:479-485 (2010).

41. Baron, 181.

42. Turkle, "Reclaiming Conversation," p. 213. Research from Carrie B. Fried, "Laptop Use and Its Effects on Student Learning," *Computers and Education* 50 (2008): 906-14.

43. Kermit Pattison, "Worker, Interrupted: The Cost of Task Switching," 7 July 2008, https://www.fastcompany.com/944128/worker-interrupted-cost-task-switching.

computer information do not only affect the user; in a classroom these distractions can affect all of the students around the open laptop.[44]

These distractions prevent learning that could be taking place regardless of the content of the distraction. According to an experiment at Cornell University, students who were allowed to surf the web during class "performed significantly poorer on immediate measures of memory for the to-be-learned content," and it made no difference whether they surfed information related to the classes content or not.[45] In higher level thinking, the cost of distractions becomes even greater.[46]

Multi-tasking is distraction in disguise, and in life and in the classroom, attention is the key to learning. That is because the brain can only focus on a limited amount of information at any given time, and if that information is not "under the constant glare of attention,"[47] it will not be stored in long-term memory. Learning happens in this balanced interplay between working memory[48] and long term memory. Torkel Klingberg, professor of Cognitive Neuroscience at the

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44. Faria Sana, Tina Weston, and Nicholas J. Cepeda, "Laptops Multitasking Hinders Classroom Learning for Both Users and Nearby Peers," *Computers and Education* 62 (March 2013): 24-31.

45. Helene Hembrooke and Geri Gay, "The Laptop and the Lecture: The Effects of Multitasking in Learning Environments," *Journal of Computing in Higher Education*, 15, no. 1 (September 2003): 46-64.

46. J. Gregory Trafton and Christopher Monk, "Task Interruptions," *Reviews of Human Factors and Ergonomics*, 3 (2008): 111-26.

47. Torkel Klingberg, *The Overflowing Brain*: *Information Overload and the Limits of Working Memory* (New York: Oxford University Press, 2009), 36.

48. "Working memory" refers to "our ability to remember information for a limited period of time, usually a matter of seconds. To all appearances it might seem a simple function, but it is fundamental and vital to numerous mental tasks, from attention control to solving logical problems…" "What makes working memory particularly interesting is that it not only retains instructions, numbers, and positions in the memory but also seems to play a critical part in our ability to solve problems." Klingberg, 33 & 40.

Stockholm Brain Institute, says, "If we do not focus our attention on something, we will not remember it."[49]

This is one of the reasons why too much information prevents deep reading and thinking. Nicholas Carr has a helpful example: If long-term memory is a bathtub, with an almost limitless capacity to store information, then working memory is a thimble holding a very small amount of information, filling long-term memory one thimbleful at a time. Only by single-mindedly concentrating on information can people transfer it, thimbleful by thimbleful into long-term memory. Every day, Carr writes,

> [w]e face many information faucets, all going full blast. Our little thimble overflows as we rush from one faucet to the next… When the load exceeds our mind's ability to store and process the information—when the water overflows the thimble—we're unable to retain the information or to draw connections with the information already stored in our long-term memory. We can't translate the new information into schemas. Our ability to learn suffers, and our understanding remains shallow.[50]

Media Ecology and recent research shows that digital technology affects the mental environment in which we live and affects the brain itself. Digital technology creates a bias for more information at a faster rate that discourages focus and encourages multitasking and distraction; it can change the brain in a way that hampers memory, learning and deep thinking; and people interact with information on a screen differently than with a hardcopy. How does the average student experience these effects at Wisconsin Lutheran Seminary? How does the use of technology affect cognition as WLS students carry out exegesis? The study of the experience of five recent graduates gives an answer.

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49. Klingberg, 22.

50. Carr, *The Shallows*, 124-5.

INTERVIEWS

Five interviews with graduates from the last three years at WLS help us to understand how technology is affecting students. These were semi-structured interviews, loosely following the questions in Appendix A. After analyzing the interviews, I color-coded and grouped quotes according to common themes. These themes were “mental environment,” “language and exegesis skill,” “multitasking,” and “distraction in and outside of the classroom.” My findings are organized according to these themes, with the last two themes synthesized.

Participants

Participant A was a diligent student who was never very confident with the biblical languages. He is a frequent user of digital technology and made use of it around 7 hours per day while at the Seminary. (Making use of technology here means that he was actively using a computer or smartphone or watching a TV screen. These estimates did not include short interruptions such as texting or quick social media checks while doing other things).

Participant B says it is fair to call him the “everyman Seminary student.” He did what he needed to do to get decent grades and learned the biblical languages without much trouble, but never really enjoyed learning them. He is comfortable using and figuring out digital technology and estimates he made use of it around 8-10 hours per day at the Seminary.

Participant C was a hardworking and studious student who had to put in a lot of work particularly in memorization. He is a skilled user of digital technology, and estimates that he made use of it around 9 hours a day at the Seminary.

Participant D struggled with the languages and had to work hard to succeed. He is the kind of person people go to when they have technology issues and uses technology frequently. He estimates that he made use of digital technology around 9-10 hours per day at the Seminary.

Participant E was an above average student in biblical languages. He currently uses digital technology "all the time every day" and estimates that he made use of it 6 or more hours a day while at the Seminary.

Technology and the Mental Environment It Creates

"I have a bit of a problem." That was how participant D answered (with a sigh) when asked about his daily technology use. Many technologies may be "treated as normal as the air we breathe,"[51] but he has grown tired of filling his lungs with them because he feels it is affecting his brain. "[My brain] has a harder time doing long-term thinking, in the sense of processing material. It wants shortcuts. But I would definitely say it's addictive, and I'm almost to a point where I'm trying to facilitate [i.e. gain greater control over] technology in my life."

Because of how it affects his mood, Participant E also wished he had greater control over his technology use. "I definitely want to look at the screen less—I think about this often—and I normally don't feel good about myself when I've been sitting in front of a screen for six hours or more, which as a pastor becomes a constant thing you are doing."

Not all participants felt this way about technology as a whole, but not because they did not care about how technology was affecting them. As Participant B put it, "The only time I

51. Dyer, 22.

thought I should cut this out is binge-watching Netflix. But as far as cell-phone or computer use, *[it] never really occurred to me.*"[52]

Several participants simply had not considered that technology could be affecting them. This is not unexpected. Media ecology is an important study precisely because many people are unaware of the effects of their mental environment. Despite this lack of awareness, however, all of the participants had been making conscious choices regarding their use of technology. This became clear from their personal Bible reading habits and their decisions concerning reading on screen or on paper.

Participant A prefers a print Bible and a notebook for personal devotions. "And I love that because, a lot of the day I'm plugged in to the computer, so yeah, it's really nice not to be looking at a screen for that." Participant E can't imagine using anything but a hardcopy for Bible reading. "Every time. I would never use a computer. I won't even use my phone. I mean I have it on there if I need to look something up, but I will not read the Bible on my phone." Participant B uses a print Bible with wide margins for notes. "You can write in it, you can get familiar with it. You're gonna use it more than once so you can actually get familiar with the whole thing." Participant D is the only participant who uses a computer for his devotions, but even he *wished* he used a print Bible. For certain kinds of work the participants preferred paper over pixels. This preference showed up in more than just their Bible reading habits.

"I think it's easier to pay attention when [material is] not on a screen," said participant D. "It's kind of more in the real world… The assumption of material on the computer—that is probably the worst place for it. It would be better to print off the article and read it… It's hard to

52. Emphasis mine.

differentiate material if it's all on one—the same screen—over and over." Participant A even closed his nearby computer in order to fully process what he was reading in hardcopy. "I much prefer reading out of a book. I think I can remember things a lot better… I was reading Luther for my sermon this morning and I shut my computer… so I felt like I could process it." Participant E explained how he reads differently based on the medium.

> [Reading on paper] is more real. You take it more seriously. For sure. You're used to scanning through information on the computer constantly. If you have a hardcopy in front of you it just seems much more legitimate, just to be reading it that way. And I know mentally I pay more attention if it's hardcopy and I'm devoting my attention towards that than if I'm reading it on a screen, [where] I will read it much quicker and less thoroughly.

From believing that their ability to think deeply has been affected (Participant D) to acknowledging that they read less carefully and attentively on screen (Participants A, E), the experience of these former Seminary students is consistent with what current research has shown on the effects of technology. Even those who had not consciously considered the effects of the screen were making decisions to avoid it when they felt their work was important and required careful thought, as shown by their daily Bible reading habits and other reading decisions. These decisions, unfortunately, had not extended into the realm of the in-depth work of text study which these students were required to do on an almost daily basis at the Seminary.

Technology and Its Effects on Biblical Language Study

Despite their preference for hardcopy, each interview participant used the Bible software *Logos* almost exclusively while preparing for exegesis classes at the Seminary. This does not mean, however, that they did not sense that some of the negative effects of this technology carried over into their skill with the Biblical languages. Participant A described his experience this way:

> I couldn't look at a word and remember it—I'd have to look it up, and what would happen is that I would get lazy every time, so I found that in both Hebrew and Greek I would take it for granted. I would sit there and think. "Ok, I have to memorize this word" but then I would sit there and repeat it, and close my eyes and repeat it, then I wouldn't remember it the next time I saw it because it was just that easy, you would just keep going and floating [with the mouse and *Logos* would give you the meaning]…
>
> I think just anything really related to memory was really affected when it comes to technology… Not even my desire to remember things, just *not being able to* because your mind is like, "Who the heck cares because you have a crutch so you don't need to work."

This is what John Dyer was talking about when he said that people in the age of information tend to cultivate a skill of accessing information, rather than acquiring it.[53] Participant A was experiencing that although he wanted to memorize words, and although he was putting effort into doing so, his ability had been hampered by technology. Technology can compensate for this loss of vocabulary with quick information, but this compensation does not preserve the individual language skill of the user. Participant E found himself trying to explain this trade-off.

> I lost my Greek skill, where I cannot even open up the Gospel of John and read it… I don't know enough words anymore. That's because when I do do it, I use *Logos*, and I don't know the words, like I don't sit long enough. Maybe not looking it up in a dictionary doesn't make it serious enough. It's cheap knowledge.

The wealth of information provided by *Logos* encouraged these participants' brains to prefer skimming from word to word, quickly accessing and discarding information, instead of putting in the hard work of committing information to memory one piece at a time and actually acquiring it.

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53. Discussed on page 11 of this paper, see Dyer, 163.

One would expect three years of studying the Bible in the original languages at the Seminary to build on the skills acquired at Martin Luther College and to improve a student's ability to carry out exegesis once he is in the ministry. But after acknowledging that he sometimes used *Logos* as a crutch, Participant B said, "I'd say my language skills didn't really progress much at Seminary, other than understanding the language better in a big picture way." When asked if students do not need as much skill in the languages because of the helpful technology at their fingertips, he replied that students should learn Greek and Hebrew more in depth before using Bible software. "There's a lot more of this language than you'd think, and it'd be nice to understand that in a bigger way before you get into the technology."

This does not mean that the participants were against Bible software. All of them use it whenever they prepare a sermon. They simply recognized that the benefits came with a trade-off. When asked if *Logos* was beneficial to his class preparation at WLS, Participant D replied, "Yes, very much so. And this is where I'd say it hindered: the basics. So remembering sentence stuff and how they're formed, retention, and definitions."

Logos provides its users with incredible amounts of information at incredible speeds. By virtue of being Bible *software*, *Logos* also interacts with its users through the screen. As the experience of the participants above shows, this amount of information, communicated by a medium which is biased toward large amounts of information, affected their brain's ability to remember the basic components of the Biblical languages. It was like they had received ten boxes of disassembled furniture from IKEA but had been robbed of the little tool to put all of the pieces together. Not only that, but—to push the analogy—the technology also encouraged them to put off assembling the furniture because soon a machine would come and do it for them. This showed up in how *Logos* affected study habits and class preparation.

This tendency to neglect to assemble meaning out of the information carried over into Participant B's vicar year. "[When I handed in my first text study] both of my supervisors said, 'This isn't exegesis, this is just notes.'" He went on to say, "*Logos* gives a bunch of information, but it doesn't give any meaning."

Participant E was filled with regret when talking about the regression of his language skills while at the Seminary, and is worth quoting at length (emphases are mine).

> It's a chain reaction. I think I would be able to translate it without the computer and without doing that extended amount of time [working on a text] if I had been better at constantly doing study in the years previously. It's just a built up skill and, if you don't have all the pieces in play when you look at it, you don't see nearly as much as when you're in the thick of it, you're remembering everything, you're doing all the vocab, everything you're supposed to do. And I would say I did that mediocrely throughout. I could do it when I was in my prime at the start of Seminary, but I would say *at the end of Seminary I was less capable*. …
>
> I think [translating without *Logos*] should definitely be forced more. And I would have hated myself for saying that, because you're so excited about having *Logos,* because it will do these things faster and it will save you time. *But in saving time it relieves you of using your brain*. And you forget the things that you've been studying for the past four years. The charts and the forms. The things that wouldn't matter if translating wasn't so specific. …
>
> I wish I would've been forced more. No question. Because I am—like I said—I was worse at my languages when I finished Seminary than when I started. I learned a lot because of professors and I was still in the Word, but *I did not use the language skill…because I could fake it. …*
>
> There were some days I [didn't open *Logos*] on purpose just to force myself to know it better. "Today I'm not even going to allow myself to have it open." I remember doing that a couple times as just a wake-up call. "You don't know how to do this anymore! So do this just to make yourself realize that you don't know anything!" …
>
> You want to encourage [students] to take this time and have that practice of "This is how long it takes me to study the text." Because I don't have that habit. I'm fighting back into that because I've gotten lazy. *I got used to the lazy method of studying Scripture*. It's extremely detrimental. My language skills are not what they once were.

Participant E was not a student who disliked the languages or struggled to learn them at MLC. He was an above average language student who never intended to just make it by until he could use *Logos* at the Seminary. Now, three years into the ministry, he feels he is fighting to

learn how to study the original languages all over again because of how much his skills declined at the Seminary. He is not alone.

The only warning given about *Logos* at the Seminary (at least the only warning any of the participants remember) was that it should not be used as a crutch. In addition, most participants only remember hearing this at the initial presentation about how to use *Logos*. But current research and the experience of the participants show that more warnings, direction, and practical insight should be given. By virtue of being couched in a digital environment, *Logos* can physically change the ability of its users to remember vocabulary and grammar. It can also encourage the habit of skimming through the information concerning the original language instead of learning this information and constructing meaning through in-depth exegesis.

Distraction and Multitasking in the Classroom

Another way technology can hinder learning and thinking during exegesis is by fostering distraction, which is the opposite of focused attention. As noted earlier, "If we do not focus our attention on something, we will not remember it."[54] The wealth of information provided by communicative technology encourages distraction inside the classroom. "Right away when you open up a screen then you have the potential to check the time—it's as simple as that—or open up the browser or whatever…" said Participant B about the computer in general. On whether computers were distracting during class, he said, "Quite a bit, you can't get around it. It's just a horrible pedagogical technique to have the whole world at your fingertips when you're sitting in class."

54. Klingberg, 22.

A normal class at the Seminary has "between 50-75% of people paying attention. Not more. Unless you know [the Professor is] making a very dramatic point but on a normal [class] I guarantee there are at least a quarter that aren't paying attention. Personally, I would say I was distracted a fourth if not a third of the time (Participant E)." Participant A was a member of two different classes during his time at the Seminary, and said, "[Distraction] definitely varied by class… I would say people are more in tune during exegesis, at least from my perspective. Within exegesis, I would say, oh I would say 50/50. You look at a guy's computer at any given time and he might be online and the next minute you look he would be off and paying attention. I would say there were probably zero percent of people who never went online during it." Personally, he "would say for the majority of classes I was engaged for all but 3-5 minutes, where I'd quick check my email or something… [I'd] check email once or twice per class or Facebook, but for the most part I was kinda engaged taking notes on Onenote. I was kinda nerdy like that." If this student considered himself "kinda nerdy" for only being distracted for 3-5 minutes once or twice per class, then how distracted would a "non-nerdy" student be?

Sometimes the distraction came from the students' own screens, and sometimes it came from the screens around them. "I sat in front for most of my classes so that I wouldn't have to look at their screens. And if I did [look at their screens], it would have been a distraction (Participant D)." Participant E described what might happen if you notice someone else's screen, saying, "Sometimes it is, where you're either bored or you're just done—you're checked out—so then you distract yourself with something else, or you see someone else doing it, and then you're like, 'Oh I can do that too, I should try that game, I should play Candy Crush…'"

These distractions affected the level of thinking and interaction in the classroom. [Distractions] "drastically affected our conversations at times," said Participant E. "I do think a

lot of things that, if we didn't have computers there, we would have [debated] a lot more [but] we would just let it go because we could distract ourselves."

"I think what [the level of distraction] really negatively impacts… [is] the ability to deep think," said Participant A. He continued,

> [It negatively impacts the ability] to comprehend and be able to reiterate that in your own words. To be able to ask a question, an intelligent question, to have a conversation in your small group if you have a break out group about it, oh yeah, that is getting past stage one and getting to deep level questioning and wondering, certainly is negatively impacted by the use of technology in class. I don't think there's a doubt about it.

When asked if he would change the way he used technology at Seminary, Participant C said, "I don't know if I would change how often I use it, but maybe the way—the distractions that come up with it. So if you're working on something where you can 'multitask,' but you're really doing something else like going on Facebook or checking emails or something like that."

Because of the presence of digital technology, these students were often trying to do two things at once in the classroom: They were trying to learn, and they were trying to manage distractions, either by resisting them or devoting attention to them. They were not able to "multitask" and do both of these things at once. Their learning, either through interaction with the material, the professor, or each other, suffered. This is the kind of learning environment that digital technology fosters at the Seminary.

"Technology causes you to get very used to thinking you can multi-task—but guys can't multitask," said Participant E. "But you just think, 'I'm sitting here for a while, all right I need to check something, I need to fill this time.' We're not good at just sitting and being bored." The temptation to multitask increases during "boring" moments, which, as noted earlier by Sherry Turkle, are opportunities for learning and creating connections, if only the moment is not interrupted by something more dopamine-inducing.

"Multi-tasking" was still detrimental when it was class-related. Participant B related his experience in Romans class:

> [Y]ou could have three commentaries open on your *Logos* and then flip through those and see what they say about this study point that's being talked about and refresh your memory for it. And that's really nice because if you're completely engaged with the class then you have so many more opportunities to learn in that moment if you can be completely engaged. But the drawback is that it is a lot harder to do that because you have the opportunity to be distracted.

Participant D agreed that the benefits of having *Logos* and other technology in class did not necessarily improve learning. "I think it ends up being more of a distraction, looking up all those things during class. Trying to process something while the professor is talking… It's like you're almost trying to think of a different question while he's talking, and you almost blank out, so to speak." Several participants used *Logos* or Word Documents to take their class notes, but "it's very hard to be looking, concentrating on what you're doing on your computer even if you are diligently taking notes, and to be able to critically think about what the teacher is saying without you making eye contact with him (Participant A)." For these participants (who were evidently part of the 98% of people in the US who are not "supertaskers"), multi-tasking meant switching back and forth between two things and doing both poorly.

Participant B experienced how multitasking cost him time because of what researchers have called "switching costs."

> I think in general, for any task, *it takes me about ten minutes to switch* (emphasis mine), to really be into it. I mean, 30 seconds until, "Ok, I get what we're doing," but to be like, "Hey I'm actually interested in this now"—I've just noticed that with anything I do, when I'm working on a text study or something it takes me ten minutes [until] "Ok, well now I can sit here for two hours."

The cost of the distraction of multi-tasking carried over into the ministries of the participants as well. "In the office, if I let myself get distracted when I'm trying to do a text

study, I may not be able to return to it that day," said Participant E. "That's how bad it can be. I will not be productive on that deep thinking because I wasted it." Participant A described how multi-tasking robs him of time and focus.

> You know with technology interrupting us so often, a lot of us are so poor at deep thinking we don't even know what it is… [When I get distracted] I'm usually like, 'I can get back to it right away,' but then I'll find then it will prove itself wrong because what will happen is I'll check my phone or check my email and even though I think, 'Yeah I can focus right back in'—like a text study that I should really get done in that four hour time—I won't. I'll get like 70% of the way there. You know what I mean? So 4 hours—I'm like, 'I should have this done, but it's not.' That might be proof to me that I'm not deep thinking as effectively or as originally as I can.

Findings of the Interviews

Readers of the excerpts of the interviews above can come to their own conclusions about how current research into the cognitive effects of digital technology reflects the situation at WLS. The comments made by the participants were reflective of comments this author has been hearing for several years from members of the three different classes of pastoral candidates of which he has been a part. The author of this paper cannot help but reach this conclusion: Jokes about forgetting one's Hebrew over Vicar year and about *Logos* doing text study for you are not just jokes but a form of truth-telling; digital technology has played a part in fostering an environment where their irony signals a reality among students.

When people can access endless information, the skill for our times is being able to sift through that information, decide what matters, and decide what to do with it. The digital environment at the Seminary gives students access to a wealth of information but hampers their ability to wisely deal with it. Exegesis requires accurate information about the text, but that is not all it requires. To draw meaning from a text also requires focused attention on the most important information and deep thinking to make that information meaningful in context. In the Seminary's

current digital environment, the average student's tendency to "get used to the lazy method of studying Scripture (Participant E)" prevents him from taking all the steps to draw meaning from the text. *Logos* and typed class notes provide him access to an abundance of information, but he does not often "acquire" this information because he is either distracted, or he considers access to the information to be enough. This leads him to begin to lose the mental skills needed to do something worthwhile with this information. His brain becomes wired for distraction, which hampers his ability to focus on the original languages, make deep connections, and come to creative conclusions. His failure to use the time *Logos* saves him to think deeply about the text leads him to lose language skills over the course of their time at the Seminary, which is connected to a loss of exegetical skill as well.

When a current pastor heard about the topic of this paper, he said, "Have you seen most of the papers presented at circuit and district conferences recently? They quote the Seminary Essay File more than they do original exegesis." Whether there is truth or not in his sarcastic statement, the current digital environment at the Seminary is developing students who are more skilled at finding and quoting the conclusions of others than coming to conclusions of their own through in-depth original language study. If the average student were asked to explain a particularly difficult Bible verse, he could quickly access the Seminary essay file, browse the thousands of books and dictionaries on *Logos*, search his own notes rapidly typed during class, and give an explanation. If he were asked, however, to instead open up a verse in his Greek or Hebrew Bible (with dictionaries available) and answer only on the basis of the text, would he be able to give a confident explanation? Would he be willing to reflect his heritage of Wauwatosa theology and put in the time to come to a conclusion of his own on the basis of personal Scripture study? Would he overcome the interruptions of text messages and emails to slow down

and embrace the quiet consideration of the text in deep thought? The interviews above seem to answer those questions with a painful "probably not."

These conclusions may sound a bit one-sided, and they are intended to, because the "debate" to this point over digital technology use at the Seminary has been one-sided in the other direction. *Logos* and laptops are required and encouraged with little caution. Almost no warnings or direction are given about how those technologies and other universally adopted tools such as smartphones can negatively affect the thinking mind of the pastoral candidate, which is a quintessential tool for understanding what God is saying in his Word. The interviews above and the conclusions drawn from them will hopefully serve as that necessary warning: when it comes to digital technology use at the Seminary, it is not enough to say that it is a neutral issue. Among students of this generation, the technology in use *tends* to encourage distraction and multi-tasking and *tends* to discourage deep thought and focused learning. The subsequent mental environment this technology *tends* to create has been demonstrated to be detrimental to students' language skills and classroom learning. It is as if students are getting used to checking their phone while talking with God, unaware that they are thereby reducing what once was a deeply satisfying conversation with him and his Word to an exchange of biblical text messages.

These conclusions serve as a warning; they also reveal a need for direction. How can students and faculty create an environment that encourages focus? How can we adjust our use of technology so that our brains *tend* to dive deeply into the Biblical text? To offer a carefully designed recommendation goes beyond the scope of this study, but a focus group of five juniors suggest that a more thoughtful approach is not only possible, but immediately available.

TESTING A MORE THOUGHTFUL WAY

Intentional Technology Use

The conclusions reached by this study do not argue for banning technology from the Seminary. Just because it would be a poor choice to converse with a spouse via text when he or she is sitting across the table does not mean that married couples should never text. The above conclusions do, however, argue for the need for technology to be managed and used in a more thoughtful way. The interested person can find many recent books which not only demonstrate how beneficial managing technology can be in everyday life, but also give helpful examples of personality-tailored ways to regain or improve the skills of concentration and deep thinking.[55] A thoughtful approach to technology is important for everyday life; it is essential for students at the Seminary.

Better use of technology at the Seminary will begin with each student identifying his goals in any given situation and evaluating whether technology is helping him achieve that goal. This requires an honest assessment of how technology is affecting his mental environment and tendencies.[56] The student who is aware of his goals and how certain technologies affect him can be intentional about choosing, or not choosing, certain tools for any given situation.

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55. One such book that this author found helpful was *Deep Work* by Cal Newport.

56. This assessment can be aided with free software such as *RescueTime*, which records how users spend their time on the computer and gives a weekly report on how productive or distracted they have been.

One Option

This approach can be applied in the area of exegesis. If his goal is to gather a lot of information about the text, a student may choose to make use of *Logos*. If his goal is to carefully consider this information and draw conclusions, the student may choose to close *Logos* if he has recognized that having *Logos* open, especially on an internet-connected laptop, tends to distract him from his consideration of the text. A thoughtful use of technology would then be for the student to use *Logos* to save time when gathering necessary information and then to set aside *Logos* to consider the information in a distraction-free environment.

The student's goals would also determine his technology use in the classroom. If he would like to take as detailed notes as possible, then using a computer without internet might be the right choice. If he would like to immerse himself in conversation with the professor, his classmates, and the text, he could choose to use his hardcopy Bible and jot down the most essential notes.

Focus Group Test

Five first year students at the Seminary agreed to serve as a focus group to test this approach. For one week they used self-check sheets they had been provided (Appendix B) to reflect on their normal preparation and in-class experience for an exegesis class (or isagogics class when the exegesis class was not going through Biblical text or had the day off). They used technology normally and recorded how often they multitasked or became distracted, described how satisfied they were with their preparation or with the class itself, and described their level of thinking.

During the second week, the focus group used technology intentionally according to a loose plan (Appendix B). For the first three days in class, they had the option to use their

computers in class without internet or to use only a hard copy Bible and written notes. For the last two days, they were required to use only a print Bible and written notes. During the first three days of class preparation, they were instructed to silence their phones and tuck them away, turn off their internet, and then spend twenty minutes using *Logos* to get all the notes they needed to understand the text. They were then given a five minute break where they could check their phone or anything on the internet. After the five minute break, they were to devote fifteen minutes to working through the text with only their written notes and a print Hebrew or Greek Bible. During last two days of class, they could continue using that method or come up with a method of their own which intentionally minimized distractions and minimized the use of technology. Once again, the focus group used self-check sheets to reflect on their preparation and in-class experience.

After the experiment I met with the focus group, and we discussed their experience. During the first week several were surprised by how often they had the urge to be distracted or actually were distracted, especially by checking email—the record for one of them was twenty times in one school day! During the second week of intentional technology use, all of them recognized benefits in the area of distraction, and some found that their increased level of focus meant they spent less time doing homework while feeling more prepared. With the exception of not being able to take notes quickly enough in an isagogics class (which is more fast-paced than an exegesis class), they felt their participation and learning in class improved.

Four of the participants agreed to write a paragraph summarizing their experience. While technology use has to be facilitated for more than a week for significant brain tendencies to change, they still noticed some benefits of intentionally using their technology. Some excerpts of their reactions will serve to show that intentional technology use can be both eye-opening and

helpful when it comes to distraction and exegesis. Their intentions to continue aspects of the experiment also show that intentional technology use is realistic.

On Distraction:

Participant 1: "I noticed that I check the internet way more than I thought! I think using technology less helped me be way more efficient…"

Participant 2: "[Doing preparation without a computer] exposed me to how much time is wasted due to the distractions of technology."

Participant 3: "I noticed I am distracted a lot! I'm not focused and [find that I] want to be distracted."

Participant 4: "I never realized how much I multi-task during class. When I had to track how much I checked email or the internet that had nothing to do with class, I was disappointed."

On Using Technology Less:

Participant 1: "[It] hurt when it came to taking in-class notes. I think it's not too big of a deal to use technology less. Definitely a change to get used to though."

Participant 2: "I realized how heavily I leaned on *Logos* …preparing without the use of technology helped me contemplate the Hebrew in a more detail-oriented way. While at first it was difficult, eventually I started pickup up vocab easier… [This] method allowed me to approach NT Greek in a more efficient and more interested manner… By removing *Logos,* the vocab started to really stick in my head…."

Participant 3: "When I tried to use technology less, it took much longer, but I felt more prepared. In class was the best. I was able to really listen and take down good notes."

Participant 4: "When I had my laptop away during class, I was shocked at one point when I was the only one looking at the teacher, and everyone else was looking at their screens. I don't think it was that no one was paying attention, but it sure seemed like the focus wasn't there."

On Changes They Intend to Implement:

Participant 1: "I may slightly change my method by turning off Wi-Fi while doing homework."

Participant 2: "I will continue to implement aspects of this study into my class preparation, and I think this method certainly helps with the long-term retention of Biblical language information."

Participant 3: "I will be turning my internet off during classes and during my Greek and Hebrew homework."

Participant 4: "I do love how much my laptop helps me with classes (I have very sloppy handwriting, and I would much rather type my notes), but learned that I don't need to be on my laptop the entire class period."

A Reasonable Hope

The experience of the focus group shows that encouraging a more intentional use of technology at Seminary is realistic and reasonable. Changes do not have to be drastic for improvement in focus and learning to occur. Distractions can be decreased drastically with a few clicks of the mouse or the closing of a laptop. The student who finds, as the evangelism presenter proposed, that technology means "you can crank out a good sermon in 10 hours or so," should be encouraged to rejoice that technology has given him more time which he can choose to use for deep conversation with the original languages, not less. This is not just an option for the talented language student. All students at the Seminary of all skill levels passed Greek and Hebrew at Martin Luther College without the use of *Logos*. Those same students of all skill levels are

capable of harnessing the blessings of *Logos* and technology to give themselves more time to carry out exegesis in deep, undistracted thought. (This and other objections are answered more fully in Appendix C.) If the Wisconsin Synod prides itself in its pastors' ability to work with the original languages, then it is reasonable to encourage pastoral candidates to make technology choices that will increase their exegetical ability in these languages while studying at the Seminary, not decrease it. This is a reasonable hope.

CONCLUSION

"Blessed is the one…whose delight is in the teaching of the LORD, and who meditates on his teaching day and night." These words from Psalm 1 were both the reason I began this study and my motivation while working on this study. The teaching of the LORD, which always testifies to the Savior Jesus, is such a life giving fount of blessing that it is a delight to meditate on it day and night. The mental environment created by technology, when left unexamined and unchecked, tends to rob current students of that delight without them even knowing it.

In the classroom a few weeks before handing in this paper, a fellow student asked me what my thesis was about. As I began telling him that it was about how technology can distract us during exegesis, someone started watching a video on his computer on the neighboring desk. In the middle of my explanation, my fellow student broke eye-contact with me and walked over to watch the video. I finished my sentence, but he did not hear it. He was distracted, and he was completely unaware of it.

Students at Wisconsin Lutheran Seminary live in an environment of distraction, but it does not have to be this way. Technology can be used with purpose as the tool it was meant to be. Changes can be made to foster a brain that favors focused work and deep thinking. When this is done, students will devote themselves more fully to "meditating on the teaching of the LORD day and night" to their own joy and to the benefit of their future congregations.

APPENDIX A. SAMPLE INTERVIEW

This interview structure was followed loosely as the participant was encouraged to steer the conversation. Two interviews were conducted in person and three over Skype.

Part I—Technology Use

1. How would you describe yourself as a student?
2. How would you describe your level of tech savviness/reliance?
3. How often are you using digital technology in a given day (How often you check/use your phone, computer)? Compare that to how much you used tech as a Sem student (less, more, same?).
4. How often do you use "print" technology—read books, newspapers, magazines?
5. How do you feel technology has affected the way you think?
6. How do you feel technology has affected your ability to read for long periods of time?
7. What would you change about your tech habits, if anything? Why?

Part II—Language Study at MLC and WLS

1. How did you feel when you just started working on Biblical Greek and Hebrew for the first time?
2. Describe your ideal "text study", i.e., class prep for Hebrew /Greek classes at MLC.
3. How did knowing *Logos* was coming at Seminary affect your attitude/classwork in language classes at MLC, if at all?
4. How did you expect text studies to change/improve when you got to WLS?
5. How did your exegesis class prep change when you came to WLS?
6. Describe your class prep for exegesis class. Did having *Logos* in class encourage/discourage prep?
7. Describe your level of distraction in an exegesis class at WLS? Other people? Causes of distraction?
8. How did *Logos* affect your Greek/Hebrew skills at WLS?

9. Describe your ideal text study? What role does technology play?
10. How long do you wrestle with confusing text questions before checking a commentary?

APPENDIX B. EXAMPLE REFLECTION QUESTIONS

Week 1: Preparing for Exegesis Class:

- Make a mark whenever you have the urge to check email/internet/phone, but resist.
- Make a mark whenever you check email/internet/phone.
- Make a mark whenever you begin multi-tasking.
- How distracted did you feel as you prepared for class?
- How satisfied were you with your class preparation? Why?
- How do you feel about your level of thinking during class preparation? (i.e. I did a lot of deep thinking, I did a lot of surface thinking, I rethought/defended some assumptions, Class helped me come up with new ideas, I got lost in my work)

Week 1: During Exegesis Class

- Make a mark whenever you have the urge to check email, but resist.
- Make a mark whenever you check email/internet.
- Make a mark whenever you begin multi-tasking.
- How distracted did you feel this class period?
- How satisfied were you with this class period? Why?
- How well did I participate (circle 1-5)? How well did other participate (circle 1-5)?

1 2 3 4 5 1 2 3 4 5

- How do you feel about your level of thinking this class period? (i.e. I did a lot of deep thinking, I did a lot of surface thinking, I rethought/defended some assumptions, class helped me come up with new ideas, I got lost in my work)

- How satisfied are you with the notes you took during class?

Week 2: Preparing for Exegesis Class

- While preparing, use the following steps ***OR* try your own which minimizes distractions and your use of technology**:
    - Silence your phone and put it somewhere you won't check it. Then turn off your internet, and check the time. Devote the next 20 minutes to using *Logos* to quickly write down the notes you need for vocabulary or tough to translate phrases (if you get it done in less time that's fine).
    - Take a 5 minute break, during which you *can* check your phone/internet.
    - Check the time again. Close your computer and devote the next 15 minutes to working through the section using only your written notes and your print Bible (have an English Bible close by if you need it). Write down anything you find interesting in the text. If you get through the text before the 15 minutes is up, force yourself to walk slowly through and think about what the text is saying. After the fifteen minutes is up, you're done! (Please note if you needed more time than this)
    - ***IF YOU TRIED YOUR OWN WAY*, write it down below:**
- How distracted did you feel as you prepared for class?
- How satisfied were you with your class preparation? Why?
- How do you feel about your level of thinking during class preparation? (i.e. I did a lot of deep thinking, I did a lot of surface thinking, I rethought/defended some assumptions, Class helped me come up with new ideas, I got lost in my work)

Week 2: During Exegesis Class

- During this class period, choose one of the following options and circle it:

1) Turn internet off but use computer *2) Close computer, use only print and written notes*

- How distracted did you feel this class period?
- How satisfied were you with this class period? Why?
- How well did I participate (circle 1-5)? How well did other participate (circle 1-5)?

1 2 3 4 5 1 2 3 4 5

- How do you feel about your level of thinking this class period? (i.e. I did a lot of deep thinking, I did a lot of surface thinking, I rethought/defended some assumptions, class helped me come up with new ideas, I got lost in my work)

- How satisfied are you with the notes you took during class?

APPENDIX C. ANSWERS TO SOME OBJECTIONS

The following are answers to some objections I have personally heard to this thesis. They have often been directed at me, so I will answer them here in a personal way.

Objection #1—"It's easy for you to say to use *Logos* less--you taught Hebrew for a year so you're obviously good at languages."

Answer: I won't deny that I have more talent in languages than some, but I was never the most talented language scholar in my class at MLC. Like students of any language, most of my skill and familiarity come from consistent review and use. When I taught Hebrew during the 2016-2017 school year, I worked with students with a variety of talent. As in any class, the majority did not have a particular gift for Hebrew, and yet many of them did very well by consistently doing a faithful amount of work. They are part of the reason I wanted to write this thesis—I don't want those who have worked so faithfully to experience the regret of some of the former students I interviewed; I don't want them to reach the end of their Seminary career only to realize they have lost much of their hard-earned skill in Hebrew.

Objection #2—"You just don't like *Logos* and technology."

Answer: I love *Logos*. I use it for every text study and for exegesis homework, and I have even watched most of the videos teaching the advanced ways to use *Logos*. But after I have used *Logos* for what it does best—comparing translations, word studies, analysis, checking commentaries—I set it aside because it is not my best tool for taking all of that information and putting it together in a meaningful way. For that, pen, paper, crayons, music, and a hardcopy of the text and some undistracted time serve me better.

I also love technology. I have a program called RescueTime that records how I use my computer and gives me a daily report showing what I've spent my time on. That is very helpful technology. I used Skype, a Smartphone, a laptop and Word Documents to record and transcribe interviews. This whole thesis was written on a laptop and was automatically synced to the cloud so that it would not be lost. So I love technology—used thoughtfully. I am simply advocating that students recognize the tendencies certain technologies tend to create and to make smart decisions, rather than simply using whatever technology they can, whenever they can, because it is there.

Objection #3—"This is going to take too much time without technology."

Answer: Many of the interviews showed how technology can actually cause things to take more time. Working with distractions or with an overload of information actually takes longer and yields less for it. The members of the focus group found that they were able to prepare for their

exegesis class satisfactorily in 45 minutes when using technology intentionally. Granted, some days students do not have that long, but that should be the exception, not the norm.

But even if using technology less slows things down, is faster necessarily better? Why should a student or a pastor try to finish a text study as quickly as possible? Isn't studying God's Word important enough that we should find ways to devote more focused time to it?

Objection #4—"I don't take good notes unless I'm using my laptop."

Answer: Admittedly, this is the hardest objection for me to answer. In the case of notes, the student (and the Seminary) has to go back to the goals of a particular class. Students say they need a laptop to type detailed notes that they will have accessible for tests and for their ministries, but is information transfer the main goal of an exegesis class? If that is the main goal, why not have the professor give the students a document containing all of the important notes on a particular book of the Bible and send them on their way? If the goal is to really "learn" the text and to gain skill in drawing meaning from the original languages so that student will be better equipped to draw their own conclusions from such study during their ministries, the research and interviews have shown that detailed note taking on a computer tends to be a hindrance. One potential solution is having the professor make his notes available online for those who are worried about failing to capture every thought in their notes. Then students would be less occupied with taking the most detailed notes possible during class and more able to immerse themselves in the lesson and the conversations surrounding the text.

There are options for those who would like a hybrid approach. Those who would like to take hardcopy notes during class but have them saved digitally could use technology such as Rocketbook notebooks or *Livescribe* "smart" pens, which can upload digital representations of handwritten notes or transcribe handwritten notes into digital text. Others could discipline themselves to turn their internet off and use the less distracting full-screen modes of note-taking tools such as Microsoft OneNote while using a hardcopy Bible in order to have access to the text.

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