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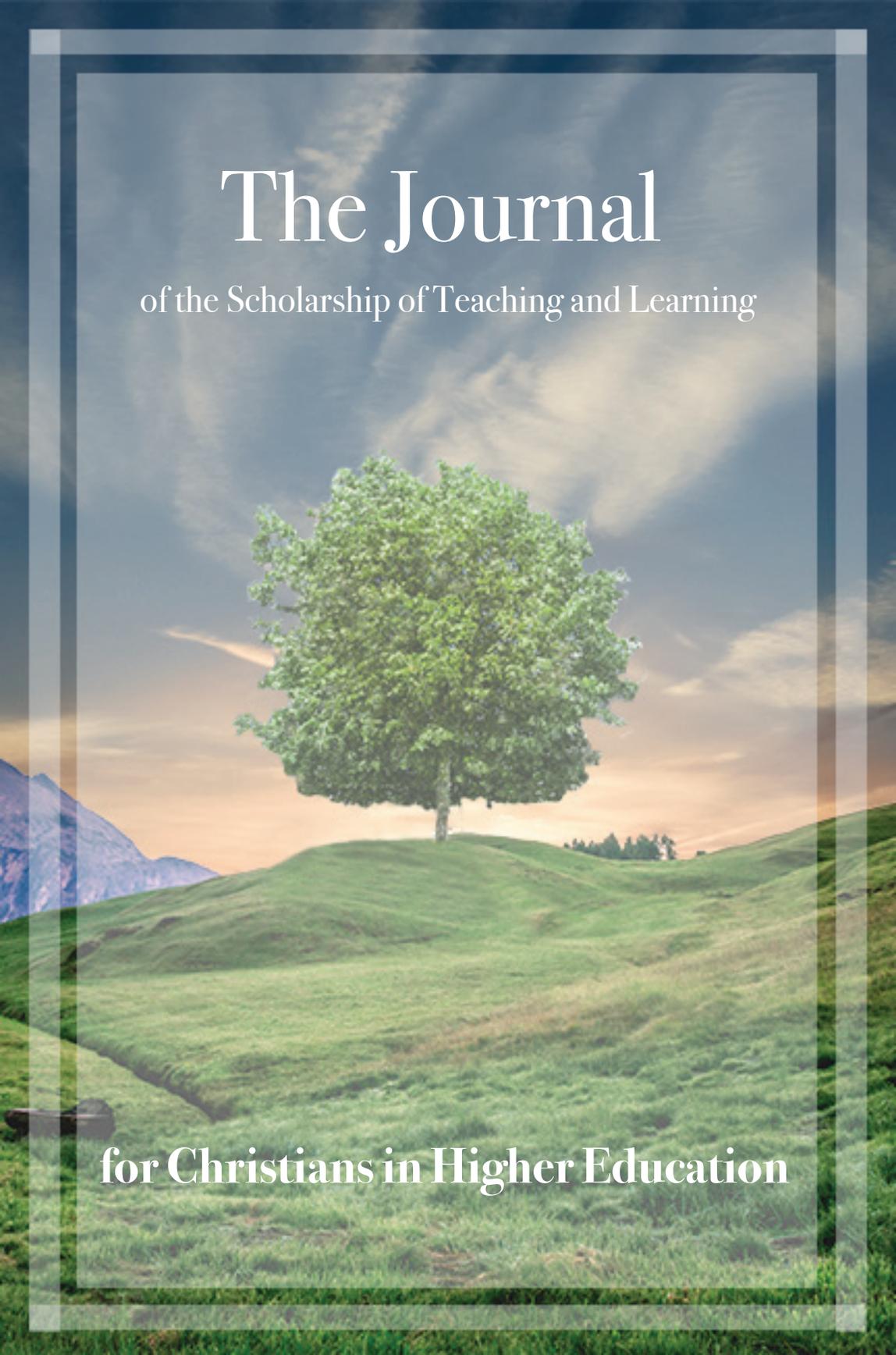


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A landscape photograph featuring a single, large, full-canopied green tree standing prominently on a grassy hill. The sky is filled with dramatic, layered clouds in shades of blue, grey, and orange, suggesting a sunset or sunrise. In the background, there are rolling green hills and a range of blue mountains on the left side. The overall scene is peaceful and evocative.

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of the Scholarship of Teaching and Learning

for Christians in Higher Education

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Scholarship of Teaching and Learning
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*Journal of the Scholarship of Teaching and Learning
for Christians in Higher Education*

The purpose of *The Journal* is to support and inspire Christian educators in higher education by providing an open forum for the exchange of scholarship related to teaching and learning, including discovery (research), integration (synthesis), application (practice), and teaching (instruction).

Find instructions for submitting articles and reviews for consideration at http://digitalshowcase.oru.edu/sotl_ched/submissionsteps.html. Submissions are accepted via email with attachment(s) to SoTL_CHEd@oru.edu.

All correspondence (including submissions) is welcomed at SoTL_CHEd@oru.edu.

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EDITORIAL

Hayoung Lim

I am honored and delighted to take on the role of General Editor for the *Journal of the Scholarship of Teaching and Learning for Christians in Higher Education (SoTL-CHEd)*, also known as *The Journal*. I am also grateful to the professional commitment of the administrative team at Oral Roberts University in supporting *The Journal* and the faculty who have produced the previous editions and assisted in a smooth transition.

In this editorial, I would like to re-emphasize the mission of *SoTL-CHEd* and to ensure that this journal provides a global and interdisciplinary forum for Christian educators to share with their colleagues well-documented teaching practices that enhance and promote learning. The purpose of *The Journal* is to support and inspire Christian educators in higher education by providing an open forum for the exchange of scholarly endeavors related to teaching and learning, including discovery (research), integration (synthesis), application (practice), and teaching (instruction). Called by God, Christian educators allow their faith to influence—either directly or indirectly—all that they do in and out of the classroom.

We Christian educators should transform our students by inspiring love for God and others and by stimulating intellectual curiosity and creativity. However, we often find that Christian higher education has been made vulnerable to attacks from politics, non-Christian worldviews, and nonconstructive criticism. We are sometimes attacked spiritually because teaching our students based on God's Word has made us vulnerable to pressure from humanistic teaching philosophies and practices that distort or ignore the Gospel. Our scholarly pursuits make us vulnerable to criticism and skepticism from our non-Christian colleagues who are too ready to dismiss the research and scholarship done by Christian educators. We need to build resilience and moral courage as Christian educators. Educating our students to build and sustain the Kingdom of God with God-centered teaching endeavors is one way

to push through this season of vulnerability. Therefore, the hope of *SoTL-CHEd* is that in sharing our scholarly work, Christian educators will find fulfillment not only in ministering to our students but also in encouraging our fellow educators to excel in God-centered teaching.

There are new developments taking place in *The Journal*. First, *The Journal's* website portal has been changed to Digital Showcase (http://digitalshowcase.oru.edu/sotl_ched/). In addition, the editorial board has been working to register *The Journal* in the DOI (Digital Object Identifier) System for *SoTL-CHEd's* credibility, copyright protection, the increased volume of *The Journal's* citations, and quality control of *The Journal*. Second, the editorial board has approved a commitment to the annual publication of *SoTL-CHEd*, and thus established important dates (deadlines) for submission and reviewing processes to ensure timely publications. Last, manuscripts considered for review need to be one of the following types and includes the required/suggested components: (a) Book Review (1000-1500 words), (b) Research Study: Quantitative, Qualitative, and Mixed Method, (c) Theoretical Article, (d) Letter to the Editor (less than 1500 words), and (e) Digital Technology Review. (See http://digitalshowcase.oru.edu/sotl_ched/submissionsteps.html for deadlines and guidelines.)

I close by reminding readers and authors of our interest in their work—empirical, theoretical, or review—and by encouraging them to submit work to the *Journal of the Scholarship of Teaching and Learning for Christians in Higher Education*. As a double-blind, peer-reviewed journal, *SoTL-CHEd* ensures quality by having our knowledgeable editorial board and reviewers read all submissions; once accepted, the articles and reviews are published in our online journal published each year on May 1. Submissions to *The Journal* should be completed electronically via Digital Showcase: http://digitalshowcase.oru.edu/sotl_ched/.

*H*ayoung *L*im
General Editor

THE NUMBER

OF CREDIT HOURS REQUIRED FOR BACHELOR'S DEGREES AT CHRISTIAN COLLEGES AND UNIVERSITIES

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Key Words *CCCU, Christian institutions of higher education, degree completion rates, degree requirements, trends in higher education*

Abstract

Trends in the minimum number of credit hours required to complete a bachelor's degree have been studied at four-year public institutions and appear to have been moving steadily towards a 120-hour standard for the majority of programs. The existence of such trends at Christian institutions have not previously been investigated nor has credit hour data been collected and made publicly available. If Christian institutions are not moving towards 120 hours, as state schools are, it could signal an emerging dichotomy in higher education requirements. This paper presents both the data and the trends in the minimum number of credit hours required to complete a bachelor's degree at institutions who are members of the Council for Christian Colleges & Universities (CCCU). An analysis shows that Christian institutions are likewise reducing their degree requirements but at a slower pace than public four-year institutions.

Introduction

As higher education has become increasingly accessible, the number of hours required to complete a bachelor's degrees has come under increasing scrutiny, mainly due to the significant number of students who do not complete their degree within the usually assumed four-year time period. In fact, less than 10% of all public four-year institutions have a four-year graduation rate of at least 50% for full-time students (Complete College America, 2014), costing Americans billions of dollars a year (Complete College America, 2012), and over 30 million students have dropped out of college without receiving a degree or even a certificate so far this century (Shapiro, 2014).

Many reasons are given as to why students often need more than four years to graduate with a bachelor's degree, including lack of preparedness (especially in mathematics), lack of availability of quality advising, a tendency for students not to take the necessary number of credit hours to graduate on time, and "excessive" degree requirements—that is, requiring more than 120 hours for a bachelor's degree (Complete College America, 2014).

In order to combat what is viewed as excessive degree requirements, there has been a national trend to reduce the minimum number of credit hours at four-year public institutions for a bachelor's degree to 120 hours (Johnson, 2012). However, it was unknown if the trend to reduce to a 120 hours minimum was also happening at Christian institutions, which are not directly under the auspices of State Regents and often have additional required courses not found at public institutions. These additional courses are ones that make the institution distinctively Christian, and they are considered essential to advancing the school's mission. This paper presents the results of our investigation into the credit hour requirements for bachelor's degrees at Council for Christian Colleges & Universities member institutions.

Methodology

The data analyzed was collected from CCCU member institutions during the spring of 2017 (Lang, 2017). We collected the minimum

credit hours required for bachelor's degrees for the academic years 2006-2007, 2011-2012, and 2016-2017 from official university catalogs and direct calls placed to various registrar offices, as needed.

We decided to collect the data directly from the official institutional sources to attain as complete and as accurate information as possible. However, finding the minimum credit hours required for bachelor's degrees at the selected institutions was not trivial. The data, if available online at all, was typically within the university catalog in PDF format and so could not be scraped using typical scripts. Some data, especially the historical data, was not available online at all and required us to place multiple phone calls to registrar's offices around the country. The data provided consists of minimum credit hour values for 145 CCCU institutions of which 123 had values available for all three years: 2007, 2012, and 2017.

Results

Current minimum credit hours for bachelor's degrees for CCCU schools mainly vary from 120 hours to 128 hours (140 schools) with just a handful of schools requiring more than 128 hours (figure 1). Over time, clusters have formed at 120, 124, 126, a cluster not seen nationally (Johnson, 2012), and 128 hours with the majority of CCCU institutions now requiring a minimum of 120 hours, the minimum number of credits generally required for accreditation.

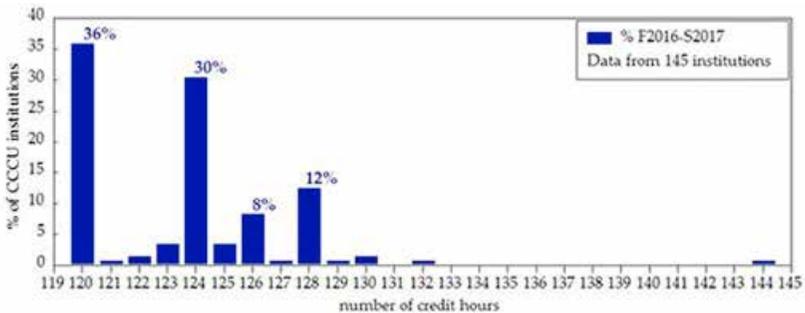


Figure 1. *Entire dataset: Minimum requirements for bachelor's degrees at CCCU schools (2017).*

Examining the subset of institutions for which we have data for all three years—2007, 2012, and 2017—we see an overall trend in the declining number of credit hours required for a bachelor’s degree. This is true both from 2007 to 2012 and again from 2012 to 2017 (figures 2, 3, and 4).

From 2007 to 2017 the percentage of CCCU schools that have a minimum 120 credit hour requirement has risen from 11% to 32% (36% if we use all 2017 data) (figure 1). The percentage of schools requiring 128 credit hours has dropped from 26% to 13%, almost a complete reversal in numbers.

Comparing the 2012 results of CCCU institutions (figure 2) with the national results from the 2012 survey of four-year public institutions (Johnson, 2012), we see that CCCU institutions seem, in general, to be moving more slowly than average towards the 120-hours now standard at the majority of four-year public institutions. In fact, in 2012, only 18% of CCCU institutions had a minimum 120-hour requirement, whereas the majority of four-year public institutions had already moved to 120 hours.

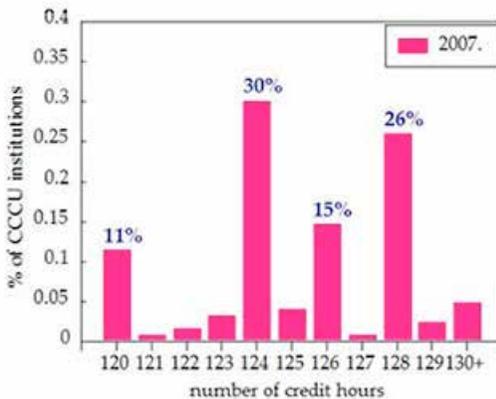


Figure 2. *Minimum requirements for bachelor’s degrees at CCCU schools (2007)*

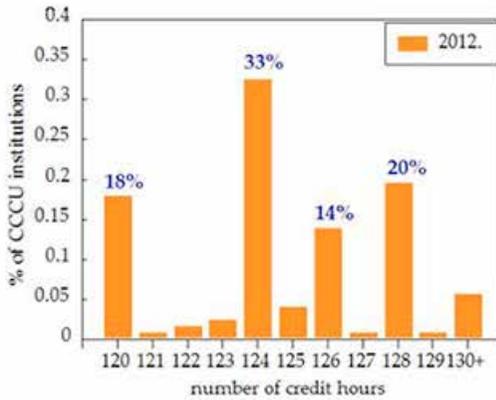


Figure 3. Minimum requirements for bachelor's degrees at CCCU schools (2012)

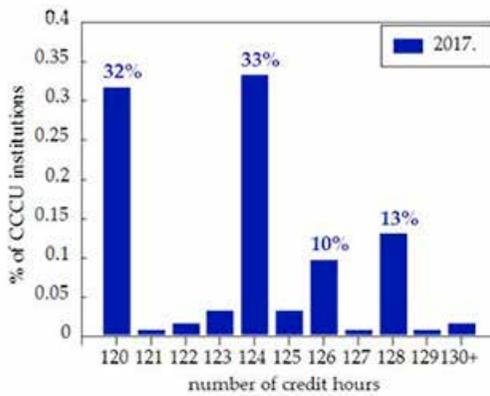


Figure 4. Minimum requirements for bachelor's degrees at CCCU schools (2017)

Figures 5, 6, and 7 illustrate how institutions have changed credit hour requirements over time, with nodes corresponding to minimum credit hours and arrow thickness corresponding to movement count.

From 2007 to 2012, 13 institutions (11%) changed their minimum credit hour requirements. All except one reduced the number of credit hours. Mid-Atlantic Christian University initially increased their credit hour requirement but has since reduced it to a 120-hour minimum. Those institutions with a minimum credit hour requirement of 128 or 129 hours migrated to both 124 and 120 hours (nine institutions),

whereas institutions with a minimum credit hour requirement of 123, 124, and 126 migrated to 120 hours (three institutions).

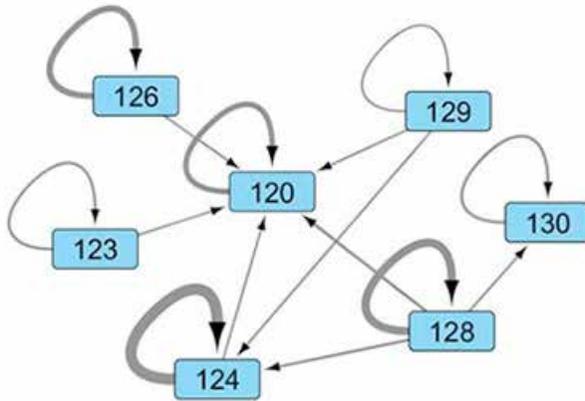


Figure 5. *Change in minimum credit hour requirements 2007-2012*

From 2012 to 2017, 28 institutions (23%) changed their minimum credit hour requirements. All except two, Arizona Christian University and Corban University, reduced the number of credit hours. Institutions with relatively high credit hour requirements of 128, 129, and 132 hours dropped to 120, 124 and 126 hours (13 institutions), three institutions dropped from 126 to 124, and 10 institutions with a minimum credit hour requirement of 124, 125, and 126 dropped to 120 hours.

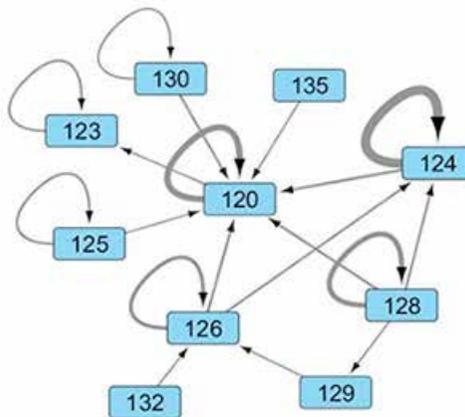


Figure 6. *Change in minimum credit hour requirements 2012-2017*

Overall, over the last 10 years, 39 CCCU institutions (32%), for which we have data, changed their minimum credit hour requirements—with only one institution (< 1%) increasing the number of credit hours required. Of the 39 institutions that changed their minimum credit hour requirements, 31 (80%) began with a requirement of 126 hours or higher. In fact, 50% of CCCU institutions that had a minimum requirement of 126 credit hours or higher in 2007 have reduced their minimum credit hour requirements in the last 10 years.

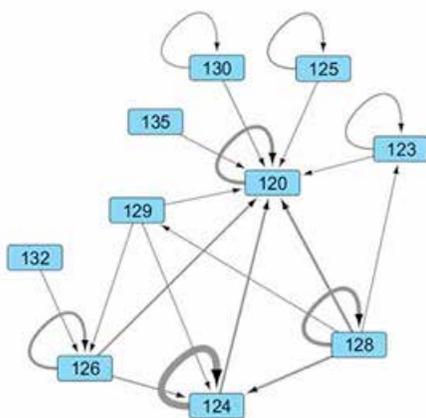


Figure 7. *Change in minimum credit hour requirements 2007-2017*

For CCCU institutions, roughly equal numbers of institutions have moved from 128 hours to 124-126 hours as have moved from 124-126 hours to 120 hours. Thus, even though the number of institutions at 128 hours has significantly dropped by a factor of two (26% to 13%) and the number of institutions at 120 hours has significantly increased by a factor of three (11% to 32%), the combined number of institutions with 124 and 126 hour requirements has remained roughly the same over the last 10 years (figure 8). This is potentially due to feelings among faculty and administrators, as experienced at our home institution, that moving directly from 128 to 120 may be too big of a jump.

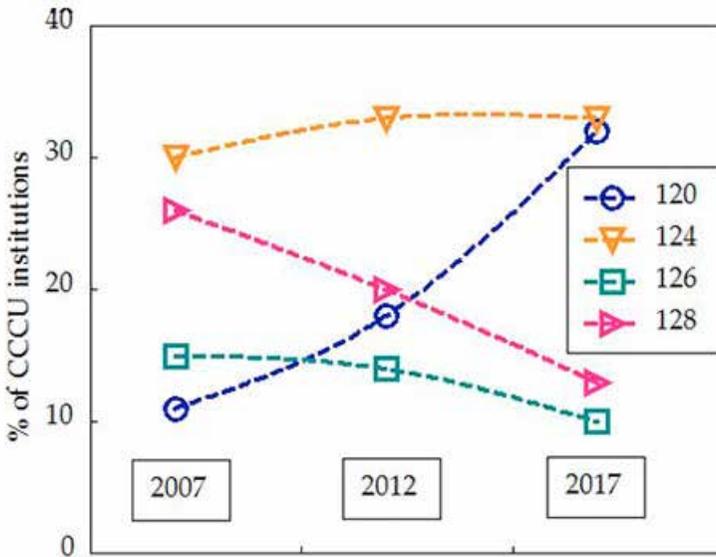


Figure 8. *Minimum credit hours required for bachelor's degrees at CCCU institutions (2007-2017)*

CONCLUSION

The minimum number of credit hours required for bachelor's degrees at CCCU institutions has trended toward the national norm of 120 hours in spite of the extra requirements usually found in CCCU undergraduate programs. We conjecture that the trend to move to 120 hours will continue both nationally and at CCCU schools and that eventually, for most programs at most institutions, 120 hours will be the standard number of hours for a bachelor's degree program.

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Dr. Andrew Lang earned his B.Sc. (1991) in *Mathematical Physics* from The University of Kent – Canterbury, his M.S. (1993) in *Applied Mathematics* from The University of Tulsa, and his Ph.D. (1998) in *Mathematics* from The University of Missouri – Columbia. Dr. Lang has taught mathematics, physics, and science fiction for the last 20 years at Oral Roberts University in Tulsa, Oklahoma, where he currently serves as chair of the Computing and Mathematics Department and Coordinator for General Education.

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THE EFFECTS OF MUSIC LISTENING

ON AFFECT, SELF-EFFICACY,
MENTAL EXERTION, AND
TASK PERFORMANCE OF ONLINE LEARNERS

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Eun-Jun Bang, Northeastern State University

Key Words *online learning, music listening, positive and negative affect, mental exertion, task performance*

Abstract

Online education is becoming more common in higher education, and the number of students taking online courses is projected to increase dramatically. Despite the popularity of online education, there is scarce research on the psychological well-being for those online learners as they work toward their academic goals. To address this gap, the current study examined the effects of music listening on online learners' mood, perceived self-efficacy, mental exertion, and task performance ($N = 42$). This study specifically focused on an online college education setting and examined the role of music listening and affect within this emotionally-dynamic context. Data analysis utilizing repeated measures ANOVA indicated that daily music listening has a significant influence on positive affect, negative affect, mental exertion, and task performance of the study participants, but not on

self-efficacy. The implications of these findings and limitations of the study are discussed in the paper.

Introduction

Approximately 5.8 million students were enrolled in at least one online learning course in the fall of 2014, and the number of students taking online courses has been steadily increasing in recent years (Allen & Seaman, 2013). While the absolute number of additional students taking online courses continues to increase at high rates, the research on the well-being for those online learners has not been adequately studied. Online learning presents an opportunity to expand access to higher education for traditionally under-represented students (Allen & Seaman, 2013). Online learners might experience unusual psychological challenges and/or learning disabilities that are different from those traditional on-campus learners. Lack of persistence in online education and its consequence of attrition might be the evidence of the hardship and challenges that the online learners are facing day by day. Programs and strategies for improving well-being in online learners need to be explored and developed.

Motivation and Self-Efficacy for Online Learners

One of the most widely used methods of providing a framework for the entire panorama of educational objectives is the Taxonomy of Educational Objectives, also called “TEOs” (Payne, 2003). Concerned with the holistic nature of learning, TEOs are divided into three domains: cognitive, affective, and psychomotor. Most objectives for conventional courses, including distance learning courses, are in the cognitive and affective domains. Student satisfaction and well-being might be related to affective domains of TEOs (Payne, 2003).

Definite and somewhat pervasive evolutionary changes like online learning are taking place in education. This change involves nurturing and naturalizing affective learning outcomes since affective learning takes place literally in every learning environment (Payne, 2003). Affective and cognitive (i.e., academic) phenomena in one’s learning

are not separate. They develop together and influence one another, and both types of the educational outcomes are evidence of concern for the “whole person.” In general, affective domain relates to characteristics such as attitudes, values, interests, opinions, appreciation, and motivations (Lim, 2011; Payne, 2003). According to the TEOs, affective domains in online learning might include awareness, willingness to receive, controlled or selected attention, responding, willingness to respond, satisfaction in response, valuing, preference for a value, commitment, characterization by value of value complex, and characterization. Assisting online programs to establish those affective objectives for the online learners and constructing the online learning environment to accommodate their affective needs might eliminate the potential barriers deterring some students from successfully completing an online program. Therefore, determining which factors or motivators contribute to a successful online learning experience, including student satisfaction and well-being, becomes a critical task for administrators, teachers, and instructional designers in online education.

One key affective, non-academic factor associated with online student satisfaction and persistence or retention in online programs is motivation, specifically, a self-determined type of motivation and self-efficacy (Dabbagh, 2007; Zimmerman, 2000). Dabbagh (2007) defines the emerging characteristics of the globalized online learner population as place-bound, goal-oriented, and intrinsically motivated for learning. Motivation is essential for the improvement of student achievement, but Sarsar (2012) reports the number one problem in online learning is a low personal motivation level. Researchers agree that intrinsically motivated learners who possess a high internal locus of control, which values self-effort—coupled with a positive attitude toward the online program and instructor as well as a high expectation for grades and degree completion—are more likely to succeed in an online course (Dabbagh, 2007). Lack of motivation has been indicated as one of the student barriers in online learning (Hart, 2012). Sharma (2005) states that motivation is the aroused state of the individual that under appropriate circumstances initiates or regulates behavior in relation to goals. That is to say, one’s level of motivation could be strongly influenced by the level of arousal and affect. The level of positive affect and negative

affect might determine one's motivation level at the time of learning (Husain et al, 2002; Sarsar, 2012). It is very clear that online students' behavior is one of the important indicators of motivation. However, in order to increase their motivation, it is necessary to take into account not only the students' behaviors, but also their feelings (Sarsar, 2012).

An online student's self-concept of academic performance has also shown to be a significant predictor for success in a distance education setting (Dabbagh, 2007). Self-concept is a collection of self-descriptive constructs that incorporates many forms of self-beliefs, self-knowledge, self-identity, and self-evaluating feelings (Marsh & Shavelson, 1985; Zimmerman, 2000). Self-concept has been defined as a global perception of oneself and one's self-esteem and affective reactions to that self-perception (Zimmerman, 2000). The academic self-concept can be understood as self-efficacy, which focuses exclusively on the cognitive construct of self-beliefs, self-knowledge, and task-specific performance expectations. Self-efficacy influences students' academic motivation in terms of activities, levels of effort, persistence, and emotional reactions. Higher levels of self-efficacy might increase students' resiliency and retention in the program (Hart, 2012). Students' beliefs about their efficacy to manage academic task demands can also influence them emotionally by decreasing their stress, anxiety, and depression (Bandura, 1997). Collectively, students' beliefs about their academic capabilities (i.e., self-efficacy) play an essential role in their motivation to achieve goals in online learning.

Positive Affect in Online Learners for Their Motivation and Task Performance

It is suggested that motivation indicated by self-efficacy, mental effort, and self-concept of academic performance are the key affective (non-academic) factors associated with online students' well-being and satisfaction. Researchers have also agreed that a student's motivation and perceived self-efficacy might be influenced by his or her affect and mood (Bandura, 1997; Sarsar, 2012; Zimmerman, 2000). Productive learning outcomes or "quality-of-work" in online learning may be influenced by the learner's mood at the time of learning. Heightened

arousal with positive feelings can influence the way cognitive material is processed, thus influencing performance in high-cognitive demands, retention, and creativity (Ashby et al., 1999; Estrada et al., 1997; Isen, 1999; Lesiuk, 2005; 2010; Lim, 2008; Necka, 2000; Revelle & Loftus, 1992; Schellenberg, 2001). Pleasant mood responses (e.g., positive affect) are reported to enhance the creative problem-solving ability and improve performance on creative problem-solving tasks (Lesiuk, 2010). On the contrary, negative affect can influence cognitive strategies in diminished ways. For example, Lesiuk (2005) reports that while taking online courses and submitting the requirements/assignments using information technology (IT) devices, participants' stress responses were in the form of high anxiety, increased mental exertion and irritability.

Effect of Music on Positive Affect and Task Performance

The quality of work and/or task performance in online learning might be adversely affected by stress and certain negative moods (Lesiuk, 2005). Affect is most influential when tasks are complex and require highly generative processing such as online learning. There is some evidence that music is one of the significant factors contributing to one's positive moods (i.e., affect) and task-performance. For example, immediately following music listening, negative affect was decreased significantly, and positive affect was increased significantly (Lesiuk, Pons, & Polak, 2009; Lesiuk, Polak, Stutz, & Hammer, 2011). The link between music listening and improved task performance (productivity and creativity of work) was confirmed in the moderately high-stress occupation of computer information systems development (Lesiuk, 2005).

Lesiuk (2010) examined the effect of preferred music listening on state-mood and task performance in a high-cognitive demand occupation. According to Lesiuk (2010), "high-cognitive demand" is a relative term given to challenges presented to individuals that may occur on a cognitive continuum from a need for focus and selective attention to systematic analysis and creative problem-solving. In Lesiuk's (2012) study, 24 professional computer information systems developers in an

IT company participated in a three-week study with a music/no-music/music weekly design. During the music week, participants listened to their preferred music “when they wanted, as they wanted.” Self-reports on positive/negative affect and task (cognitive) performance were measured throughout the three weeks. Preferred music listening improved state-mood levels resulting in higher positive affect and lower negative affect scores, and higher self-assessment scores of task performance during the music weeks (Lesiuk, 2010). Positive affect and the self-assessment scores of quality of work were lowest with no music, while time-on-task was longest when music was removed for the computer information system developers (Lesiuk, 2005; 2010).

Increases in positive mood helped explain the improved work performance of information systems developers when working with preferred music (Lesiuk, 2005; 2010). Although improved task performance was attributed to enhanced mood (i.e., positive affect) via the preferred music listening, there was no account of the individual differences in the use of music listening for work. When music evokes a pleasant mood and an increased arousal state, participants perform better on non-musical tasks (Lesiuk, 2010). The use of music listening was shown to improve mood states over time and quality of work in the cognitive and technological tasks (Lesiuk, 2005).

The optimally increased arousal and positive affect induced from music might enhance task performance (Ashby, Isen, & Turken, 1999; Lesiuk, 2005; 2010; Lim, 2008; Necka, 2000; Revelle & Loftus, 1992; Schellenberg, 2001; Thompson et al., 2001). The previous studies provide the evidence of the benefit of music listening for positive mood change and enhanced perception of task performance (i.e., self-efficacy) in the computer users for the high-cognitive demand tasks (Lesiuk, 2005; 2010; Lesiuk, Pons, & Polak, 2009). An individual’s degree of negative mood is statistically significantly lower when he or she is listening to the preferred music, which indicates that music listening is an anxiolytic treatment in times of stress and demand of high mental exertion (Lesiuk, 2010).

The Present Study

The purpose of the present study is to investigate the effect of music listening on the mood, perceived self-efficacy, mental exertion, and task performance of online learners. This study focuses on a specific higher education learning environment, which is an online college education setting, and examines the role of music and affect within this emotionally dynamic context. While several perspectives of music and affect are relevant in the music online-learner relationship, increased short-term positive affect and decreased negative affect through preferred music listening was emphasized in this study. In addition, the effect of music on a key factor associated with online students' well-being, satisfaction, and persistence or retention, motivation, was explored by measuring self-efficacy, mental effort (i.e., mental exertion), and a self-assessment form of task performance. The following research questions were addressed:

1. Does the treatment condition (music vs. no-music) affect mood (positive and negative affect)?
2. Does the treatment condition (music vs. no-music) affect perceived self-efficacy?
3. Does the treatment condition (music vs. no-music) affect perceived mental exertion?
4. Does the treatment condition (music vs. no-music) affect perceived task performance?

Method

Participants

Table 1 presents descriptive information on study participants ($N = 42$). Forty-two online students (male = 9, female = 33) who were enrolled in at least one online course offered for one semester from a university located in the southwestern United States participated in the study. Participants were selected over two semesters. While participation was strictly voluntary, an incentive of extra credit was given by each online course instructor for their participation. Participants completed

a four-week music listening study in which participant demographics, positive and negative affect, self-efficacy, mental exertion, and task performance were measured in a series of surveys. After final approval by a university institutional review board (IRB), the survey form was embedded in the online courses with a consent form. The participants were 19 to 60 years of age ($M = 34.62$, $SD = 13.92$). A wide range of daily music listening time from 10 minutes to 16 hours a day was reported ($M = 3.8$ hours, $SD = 4.7$ hours).

Characteristics	Number (%)
Gender	
Male	9 (21.4%)
Female	33 (78.6%)
Age group	
19 to 29 years old	20 (47.6%)
30 to 39 years old	6 (14.3%)
40 to 49 years old	8 (19.0%)
50 to 59 years old	6 (14.3%)
60 years old and above	2 (4.8%)
Hours of daily music listening	
10 minutes to 1 hour	12 (28.6%)
2 hours to 3 hours	18 (42.9%)
4 hours to 5 hours	16 (16.7%)
16 hours	5 (11.9%)

Table1. *Demographic Information for Participants in Study (N = 42)*

Research Design

The study is a quasi-experimental field study utilizing an interrupted time series with removed treatment design (modified ABAB single-subject design).

Week 1	Week 2	Week 3	Week 4
Baseline / A	Music on / B	Music off / A	Music on / B
	Music log		Music log

Table 2. *Study Design (ABAB Single Subject Design)*

A demographic questionnaire was administered a few days prior to the four-week study. Four dependent variables consisting of positive and negative affect, self-efficacy, mental exertion, and task performance were measured at the end (Saturday) of each of the four weeks. A daily music log was also administered for each day (six days) of weeks 2 and 4 for participants to record the amount of time spent listening, their music selections (i.e., genre of music), and academic tasks in which they were engaged while listening to music. Examples of academically related tasks were “Reading assigned texts,” “Taking online quizzes,” “Creating a class project,” “Completing written assignments,” “Online group discussion,” and “Others.”

The first week of the study was the baseline week. Participants were instructed to begin studying as they would normally do—either with or without music as they chose. On the Saturday of week 1, the participants completed the four surveys of positive and negative affect, self-efficacy, mental exertion, and task performance.

For the second week of the study, participants were instructed to listen to the music as they wanted and when they wanted, while studying or engaging in any academic work. Participants used their own sources of music listening and combined a number of pieces of music classified by different genres (e.g., Classical, Alternative, Jazz, R&B, Contemporary Gospel, Traditional Hymn, Classic Rock, or Country) based on their preferences. On the Saturday of week 2, they completed the four sets of surveys and submitted the music log for six days.

For the third week of the study (music-off week), participants were instructed with the statement, “For this week (week 3), please do not listen to any music during your study and academic tasks” and were asked to confirm in the music log for week 3 that they had not listened to music any day in the music log for week 3. On the Saturday of week 3, they completed the four surveys again.

For the fourth week of the study (music-back on), participants were instructed to listen to the music as they wanted and when they wanted, while studying and engaging in any academic work. Participants used any source of music listening and combined a number of pieces of music classified by different genres based on their preferences. On the Saturday of week 4, they completed the four sets of surveys and submitted the music log for six days.

Measures

Participant demographic questionnaire. A researcher-designed questionnaire requested information concerning age, gender, occasions for music listening, music preferences (i.e., genre of music), and amount of time spent on daily music listening.

Positive and negative affect. The level of participants' positive and negative affect during each week was measured by the Positive and Negative Affect Schedule (PANAS) scales (Watson, Clark, & Tellegen, 1988). PANAS is composed of both positive and negative affect responses within two 10-item mood scales rated on a 5-point Likert scale (1 being very slightly or not at all to 5 being extremely) the extent to which participants had experienced each mood-state during a specified time frame. In the present study, the following instruction and time frame were used: "I have used PANAS with the following time instructions (You have felt this way during the past week)." The PANAS scale has been found to be sufficient with coefficients ranging from 0.84 to 0.90 (Watson & Tellegen, 1989).

Self-efficacy. Participants' perceived self-efficacy was measured by the Generalized Self-Efficacy (GSE) scale; (Schwarzer & Jerusalem, 1995). A 10-question test scored on a 4-point Likert scale was used to obtain individual online students' belief (i.e., self-concept) in his or her ability to accomplish the weekly academic tasks well. The Generalized Self-Efficacy scale (GSE) has been tested for internal consistency and found to be sufficient with Cronbach's alpha of 0.86 (Scholz, Gutierrez-Dona, Sub, & Schwarzer, 2002).

Mental exertion. Ratings of the participants' Perceived mental Exertion (RPE) were obtained to understand how studying, with or without music, positively or negatively affected online students' mental effort. RPE measures perceived exertion on a one-item scale ranging from 6

(no exertion at all) to 20 (maximum exertion) with corresponding descriptors of academic task intensity. RPE is highly correlated with heart rate and several other physiological measures of exertion and has been found to be sufficient with Cronbach's alpha ranging from 0.80 to 0.90 (Borg, 1982).

Task performance. The Quality of Work Questionnaire (QWQ) and Time-on-Task questions developed by Lesiuk (2005) were modified and used to measure self-perception of how well participants perform academic tasks involved in the online course work during each week. The QWQ items consisted of responding on a Likert scale (1 = not at all, 2 = somewhat, 3 = moderately, to 4 = very much so) to questions assessing academic/online learning task performance. Participants self-assessed their work quality by responding to items such as “In completing the task, was your performance effective? Was your performance creative? Did you experience fewer mental blocks than usual in the learning and performing task process? Did you use a new approach in your study and task performance? Are you pleased with the task you just completed?” Items were positively scored, summed, and then divided by 5 to obtain a mean. The higher the score, the higher the work quality (Scores could range from 5-20.)

Results

A repeated measures ANOVA was conducted to evaluate the effects of daily average music listening on positive affect, negative affect, self-efficacy, mental exertion, and task performance at different time points. These affects were measured for four weeks each (week 1, week 2, week 3, and week 4).

Positive Affect

A repeated measures ANOVA with a Greenhouse-Geisser correction showed that there was a marginally significant effect of daily average music listening on positive affect between time points $F(2.29, 94.25) = 2.82, p = .058, \eta^2p = .064$. Follow-up comparison using the Bonferroni post hoc test (see Table 3 & Figure 1) showed there was a slight, but statistically insignificant ($p = 1$), reduction in positive affect scores from week 1 ($M = 36.86, SD = 6.3$) to week 2 ($M = 36.31, SD = 8.1$).

Although again statistically insignificant ($p = 0.29$), when week 2 ($M = 36.31$, $SD = 8.1$) is compared to week 3 ($M = 33.93$, $SD = 8.1$), there was a reduction in positive affect scores. A significant increase in positive affect scores only occurred from week 3 ($M = 33.93$, $SD = 8.1$) to week 4 ($M = 37$, $SD = 7.7$, $p = .022$).

Comparison	Mean Difference	Std. Error	95% Confidence Interval of Mean Difference	
			Lower Bound	Upper Bound
Week 1 vs. Week 2	0.55	1.47	-3.53	4.62
Week 2 vs. Week 3	2.38	1.07	-5.83	5.35
Week 3 vs. Week 4	-3.07*	1.00	-5.84	-0.31

* significant α at = 0.05

Table 3. *Bonferroni Comparison for Week of Positive Affect Mean Scores*

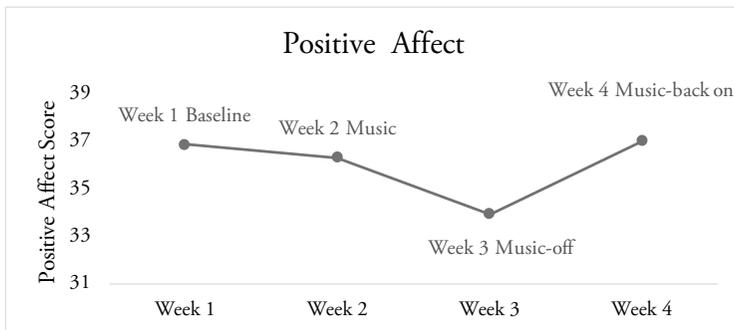


Figure 1. *Positive Affect across four weeks. The line graph shows the average mean scores of positive affect for online learners*

Negative Affect

The results of the repeated measures ANOVA indicated that there was a significant effect of daily average music listening on negative affect between time points, Wilks' Lambda = (.704), $F(3, 39) = 5.47$, $p = .003$, $\eta^2p = .296$. Using the same Bonferroni post hoc test for follow-up (see Table 4 and Figure 2) revealed that there was no significant difference in negative affect scores from week 1 ($M = 15.76$, $SD = 5.8$) to

week 2 ($M = 15.83$, $SD = 5.5$, $p = 1$). From week 2 ($M = 15.83$, $SD = 5.5$) compared to week 3 ($M = 17.43$, $SD = 6.4$), there was a considerable increase in negative affect scores, although the result was not statistically significant ($p = .82$). Finally, there was significant decrease in negative affect scores from week 3 ($M = 17.43$, $SD = 6.4$) to week 4 ($M = 13.64$, $SD = 4$, $p = .001$).

Comparison	Mean Difference	Std. Error	95% Confidence Interval of Mean Difference	
			Lower Bound	Upper Bound
Week 1 vs. Week 2	-0.07	0.98	-2.78	2.64
Week 2 vs. Week 3	-1.60	0.83	-3.88	0.69
Week 3 vs. Week 4	3.79**	0.92	1.24	6.34

** significant α at = 0.05

Table 4. *Bonferroni Comparison for Week of Negative Affect Mean Scores*

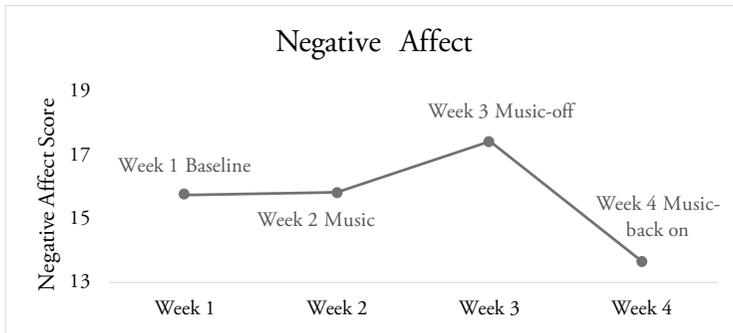


Figure 2. *Negative Affect across four weeks. The line graph shows the average mean scores of negative affect for online learner*

Self-Efficacy

A one-way repeated measures ANOVA test showed that there is no significant effect of daily average music listening on self-efficacy between any of the time points, Wilks' Lambda = (.871), $F(3, 39) = 1.92$, $p = .142$, $\eta^2p = .129$.

Mental Exertion

The repeated measures ANOVA utilization indicated that there was a significant effect of daily average music listening on mental exertion between time points, Wilks' Lambda = (.738), $F(3, 39) = 4.61$, $p = .007$, $\eta^2p = .262$. However, Bonferroni post hoc test (see Table 5 and Figure 3) revealed that the only statistically significant increase in mental exertion scores occurred from week 2 ($M = 13.60$, $SD = 2.7$) compared to week 3 ($M = 14.74$, $SD = 3.3$, $p = .015$). There was a slight decrease in mental exertion scores from week 1 ($M = 14.19$, $SD = 2.9$) to week 2 ($M = 13.60$, $SD = 2.7$), and no statistically significant difference in mental exertion scores between week 3 ($M = 14.74$, $SD = 3.3$) and week 4 ($M = 14.26$, $SD = 3.5$, $p = .55$).

Comparison	Mean Difference	Std. Error	95% Confidence Interval of Mean Difference	
			Lower Bound	Upper Bound
Week 1 vs. Week 2	-0.60	0.32	-0.30	1.49
Week 2 vs. Week 3	-1.14*	0.35	-2.12	-0.16
Week 3 vs. Week 4	0.48*	0.8	-0.29	1.24

* significant α at = 0.05

Table 5. Bonferroni Comparison for Week of Mental Exertion Mean Scores

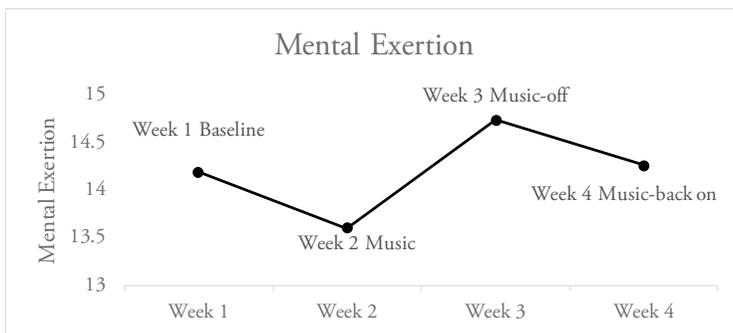


Figure 3. Mental Exertion across four weeks. The line graph shows the average mean scores of mental exertion for online learners

Task Performance

A one-way repeated measures analysis of variance indicated that there was a significant effect of daily average music listening on task performance between time points, Wilks' Lambda = (.816), $F(3, 39) = 2.94$, $p = .045$, $\eta^2p = .184$. Bonferroni post hoc test showed (see Table 6 and Figure 4) that there was no statistically significant difference in test performance scores from week 1 ($M = 13.57$, $SD = 3.3$) to week 2 ($M = 14.48$, $SD = 3.1$, $p = .61$) whereas there was a statistically significant decrease in task performance scores from week 2 ($M = 14.48$, $SD = 3.1$, $p = .61$) compared to week 3 ($M = 13.12$, $SD = 3.03$, $p = .030$). However, there was no statistically significant difference in task performance scores between week 3 ($M = 13.12$, $SD = 3.03$) and week 4 ($M = 13.71$, $SD = 2.6$, $p = .77$).

Comparison	Mean Difference	Std. Error	95% Confidence Interval of Mean Difference	
			Lower Bound	Upper Bound
Week 1 vs. Week 2	-0.91	0.54	-2.40	0.59
Week 2 vs. Week 3	1.36*	0.46	0.87	2.63
Week 3 vs. Week 4	-0.60*	0.38	-1.66	0.47

* significant α at = 0.05

Table 6. Bonferroni Comparison for Week of Task Performance Mean Scores

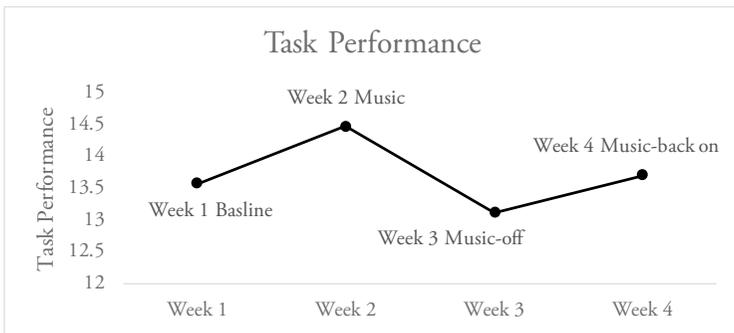


Figure 4. Task Performance across four weeks. The line graph shows the average mean scores of task performance for online learners

Discussion

Music Listening on Positive and Negative Affect

The results of the study indicate that listening to preferred music influenced positive and negative affect in online students during specific weeks of the study. Positive affect was decreased during the music-off week (week 3), but significantly increased during the following music-back-on week (week 4). Negative affect was increased during the music-off week (week 3), but significantly decreased during the following music-back-on week (week 4). Positive affect was described with the adjectives including “Interested,” “Excited,” “Strong,” “Alert,” “Inspired,” “Enthusiastic,” “Proud,” “Determined,” “Attentive,” and “Active.” Negative affect was described with the adjectives including “Distressed,” “Upset,” “Irritable,” “Ashamed,” “Nervous,” “Guilty,” “Scared,” “Hostile,” “Jittery,” and “Afraid” (Watson, Clark, & Tellegen, 1988). The results of the present study suggest that music may eliminate the negative affect including anxiety, tension, and stress in online students while they are studying for the online course or engaging in academically related tasks. The findings of the present results also indicate that mood is improved by music listening as part of online learners’ everyday life.

While not necessarily focusing on online students, a number of research studies support these new findings. Blood and Zatorre (2001) conducted several brain imaging studies using PET and fMRI, and indicated that preferred music listening stimulated the neural areas of brain reward circuitry by activating pleasure centers and deactivating the brain structures associated with negative emotions in the limbic system. Lesiuk (2000) reported decreased levels of state anxiety when music was used prior to and throughout a computer programming task. Knight and Rickard (2001) indicated that listening to soothing music diminished the subjective and physiological stress levels in college students during the preparation of their oral presentation task. Lim (2008) found that a significant effect of music listening decreased tension arousal in college students. Music may serve as an anxiolytic treatment, that is, an anxiety preventative or anxiety reducing stimuli (Lesiuk,

2010; Lim, 2008). In addition, music listening is an adequate source of mood regulation, energetic arousal, comfort, and focus for productive work (Lesiuk, 2010).

Music Listening and Perceived Self-Efficacy

The results of the study did not indicate any significant relationship between music listening and perceived self-efficacy in online students. Contingent on contextual factors (Bandura, 1997) and varying accordingly based on a person's coping capabilities in different situations (Lim & Befi, 2014), multiple external (i.e., environmental) and internal factors might be involved in one's self-efficacy. Daily listening to music might be one of the various factors; however, its sole influence on self-efficacy was not found in the present study. The Generalized Self-Efficacy Test (GSE) was designed to assess a general sense of perceived self-efficacy regarding coping mechanisms and adaptation skills. This tool was designed to measure outcome expectancy, which is defined as the belief that one's actions are responsible for successful outcomes (Schwarzer & Jerusalem, 1995). Listening to music may affect an online learner's short-term mood; however, it does not have enough potential or adequate quantity/quality of cognitive schemata to make an impact on his or her coping mechanisms and adaptation skills in terms of the successful outcome expectancy as indicated by the lack of significance in this study. Perceived self-efficacy may represent an optimistic sense of personal competence that seems to be a pervasive phenomenon accounting for motivation and accomplishments in online students even though our results did not show the relationship between music listening and perceived self-efficacy to be significant.

Music Listening and Mental Exertion

The results of the analysis indicate that music listening affected perceived mental-exertion in online students while they were engaged in academically related tasks. However, a significant increase in mental exertion only occurred during the music-off week (week 3). Those students rated the level of effort they put forth in order to complete the

study and/or academic tasks as “somewhat hard” during the music-on week (week 2), and “hard” during the music-off week (week 3). Interestingly, the participants’ mean rating of the mental exertion level was slightly decreased during the music-back-on week (week 4); however, the difference was not statistically significant. A couple of factors can be speculated: as the online course was continued week after week, the course materials and complexity might have increased. Moreover, those students might have felt more pressure to complete the academic tasks such as online quizzes or tests, participating in online discussions, and online course assignments. Therefore, their ratings of the perceived mental exertion during the music-back-on (week 4) did not yield significant changes compared to the ratings during the previous two weeks (week 2 and week 3).

Dyrlund and Wininger (2008) examined the effects of music preference and exercise intensity on exercise enjoyment, perceived exertion, and attentional focus. The authors found that the most preferred music condition resulted in the highest levels of enjoyment. The results of the study, however, indicated that there were no differences in the level of perceived exertion among those exercising while listening to preferred music, non-preferred music, or while not listening to any music (Dyrlund & Wininger, 2008). This finding suggests that the style and/or preference of music might elevate the exerciser’s mood; however, it is not strongly related to the exerciser’s perceived exertion and physical sensation. Potteiger, Schroeder, and Goff (2000) investigated the influence of music listening on ratings of perceived exertion (RPE) during 20 minutes of moderate intensity exercise. Participants were randomly assigned to the conditions of fast upbeat music, classical music, self-selected music, and no music. Potteiger et al. (2000) indicated that each type of music resulted in a reduced level of perceived mental exertion when compared with the no-music condition. The results suggested that different types of music are associated with RPE.

Lim, Miller, and Fabian (2011) investigated the effects of music on self-perceived fatigue and self-perceived mental exertion at the time of highly demanding sensory motor tasks. Music condition resulted in significantly less perception of fatigue and mental exertion levels than no music condition. However, the findings in the previous research studies

examining the effect of music on perception of exertion and fatigue level during task performance are not consistent (Boldt, 1996; Dyrland & Winiger, 2008; Edworthy & Waring, 2006; Lim, Miller, & Fabian, 2011; Potteiger, Schroeder, & Goff, 2000). The results of the present study support the findings of the present study indicating that music listening might reduce mental exertion levels of online learners.

Music Listening and Self- Assessment of Task Performance

Music elevates the listener's mood, and, in turn, positive moods enhance cognition (Ashby, Isen, & Turken, 1999; Lesiuk, 2005; 2010). Sloboda and O'Neill (2001) suggested that music experiences increased positivity, alertness, and focus on the present cognitive tasks. Edworthy and Waring (2006) reported that a higher positive affect was observed during the music condition in comparison to the no music condition and that fast, loud music might be played to enhance the assigned exercising tasks. These studies might provide evidence that there is greater integration or perceptual advantage among stimuli (i.e., learning materials or tasks) and that music induced positive affect in people.

The results of the present study indicate that the music listening during studying and engaging in academic tasks increased the self-assessment scores of task performance in online students. While, significant improvement only occurred in week 2, preferred music listening induced positive affect and heightened arousal, and that, in turn, led to perceiving improvements in task performance. From basic technological tasks to academic content acquisition to completing course assignments, preferred music listening appeared to enhance perceived task performance in online students. Participants' ratings of task performance were significantly lower during the music-off week (week 3) compared to the task performance scores of the music-on week (week 2). The participants' self-assessment scores of task performance were slightly increased during the music-back on week (week 4) after the music-off week; however, the difference was not statistically significant. A very similar pattern of score changes was observed in the results of the self-report for the task performance and the mental exertion across the three weeks:

music-on, music-off, and music-back on.

The strong positive effect of music listening during the music-on week (week 2) was not found during the music-back-on week (week 4) for both ratings of mental exertion and self-assessment of task performance in online students. Factors including increased amount of course work, studying materials with an increased level of complexity, and a higher volume of assignments could negatively influence both perceived mental exertion and task performance in those online students as the online course continued and progressed.

Limitations and Future Research

Several limitations, including the relatively small sample size, might have affected the quality of this study's results. Although the large effect sizes indicated a powerful influence of preferred music listening upon positive and negative affect, mental exertion, and self-assessment of task performance within our sample based on Cohen's effect size guidelines (1988), this current study's results should be generalized with caution to other online student populations. This limitation could be improved upon by replicating this project over the years as an ongoing research study with a relatively consistent data collection method, which would allow expanded sample size and increased generalizability of the study results. Nevertheless, the use of a conservative research design and statistical procedures with careful fidelity helped ensure the validity of this study.

A potential threat to validity was the increasing complexity of materials in the online course that were, by time, not only more complicated but also more demanding. This threat could have interfered with study participants' mental exertion and their perception of task performance. Another possible threat to validity was repeated measurements on the same tests from a relatively small number of participants. Taking the same test repeatedly within a limited time could create a testing practice effect, which means our findings could have resulted from the familiarity with the repeated measurements rather than music listening. For that reason, these internal validity threats have limited this investigation with Type I errors, and also may have led to an increased risk for Type II errors.

Detailed examination of the other dimensions of affect or mood with a larger sample could indicate particular differences in the affect change and mood regulation and further constructs relevant to motivation. Music appears to be an effective medium for inducing and sustaining (at least for a week) positive mood and diminishing negative mood including mental exertion. More empirical evidence is needed to ensure the beneficial use of music for mood alteration, mental exertion regulation, quality of work, and task performance in online learning environments with the consideration of motivation in the online students. Augmented understanding of music's effect on learning and task performance will facilitate the strategic use of music for students to reach their goals.

Thus, according to this research, listening to preferred music did increase positive affect and decrease negative affect, including mental exertion in online learners. A beneficial effect of music on online students' self-assessment scores of task performance (i.e., quality of work) was found in the present study, and it may be explained by increase in their positive affect. Music evoked a pleasant mood and an increased energetic arousal state in online students at the time of study and while they were engaging in academically related tasks. Furthermore, those students perceived less mental exertion and rated the level of their task performance higher during the time of music listening compared to the time of not listening to music. These findings of the present study suggest the preferred music listening to improve online students' satisfaction and well-being. Although there was no statistically significant difference in self-efficacy scores between the times with music and without music, the finding of the present study might provide useful resources for future investigations exploring the effect of music on self-efficacy and motivation level in online learners. We hope that this research encourages personnel involved in online education who work with online students to ensure students' satisfaction and to aid students to reach their goals through the optimal online learning experiences.

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REVIEWS

Restoring the Soul of the University: Unifying Christian Higher Education in a Fragmented Age. By Perry L. Glanzer, Nathan F. Alleman, and Todd C. Ream. Downers Grove, IL: IVP Academic, 2017. 384 pp. ISBN: 978-0-8308-5161-4 (HARDCOVER) \$40.

The 60 pages of notes and references at the end of this book serve as the proper beginning to review *Restoring the Soul of the University* (2017) by Perry L. Glanzer, Nathan F. Alleman, and Todd C. Ream. The extensive list of resources serves as evidence of this book's academic, scholarly, and source driven examination of the metaphysical in the personified higher education institution. Charles Habib Malik's *A Christian Critique of the University* (1982) may have been a call for Glanzer, Alleman, and Ream's research, structure, and strategy. The immediate profit of the research-driven writing is the anchoring of an institutional story, which is usually misunderstood, misrepresented, and mystified. The work provides much-needed facts for what many lack, validation to what many feel, and brainstorming for what many dream.

The three authors, Dr. Perry Glanzer, Dr. Nathan Alleman, and Dr. Todd Ream, share a connection to Baylor University and the profession of Christian education. They begin the book with a dedication to the educators and individuals who helped them build their own experience and character and end the book with an explicit yearning for us all to experience an educational community complete with a redeemed soul, mission, and pursuit. These bookends serve to anchor the tough task of creating a structure to not only the soul's expression but also the expression of the institution's soul.

The text is organized into three parts: Part One: Building the University, Part Two: The Fragmentation of the Multiversity, and Part Three: Restoring the Soul of the University. This highly organized structure serves as cognitive boundaries and emotional safety to explore the creation, destruction, and redemption of Christian higher

education. It is strenuous not to identify the process in higher education as an analogy for the life of an individual. Moreover, it is beneficial to understand the individual journey towards redemption as a schema for *Restoring the Soul of the University*.

In Part One, the authors connect the philosophical underpinnings of the text to the dream of Hugh of St. Victor (1096-1141), which was man's pursuit of wisdom through an intellectual friendship with a perfect God for a personal restoration of God's divine image (pp. 20-21). Narrative, symbols, and metaphor described this philosophical underpinning as institutions of higher learning were established and multiplied throughout the developing world.

Wisdom was the primary construct in the development of learning systems and the formation of higher education. Wisdom's source and purpose are presented as the foundation for personal growth. The pursuit of wisdom led to the creation of educational communities and academic disciplines. Theology was quickly separated from other disciplines and placed in an elevated position as a metaphorical queen residing in a tower overseeing her castle of education. The metaphorical model of theology became the model for geographical iterations of institutional education. However, the reformation's religious fragmentation and the enlightenment's political fragmentation fractured the educational structure. 1

With no central Biblical interpretation, wisdom expanded, and theology specialized; the queen of the tower lost its position. With theologically informed wisdom secluded to a silo, "nature and not nature's God provided freedom" (p. 55). An extension of the natural order of things became the worldview through which nationalization would rise, and the purpose of the educational community would shift to the good of the state's sovereignty and not the good of the individual's soul. A multiversity was created from growing conflict about the metaphysical, resulting in the removal of theology from the curriculum. The result was the educational shift from Hugh of St. Victor's description of a divine friendship restoring humanity as the perfect image of God to an institutional contract to produce practical knowledge for the nation state.

In Part Two, the authors delineate the institutional components experiencing fragmentation, including the professor, the students, the

curriculum, administration, athletics, and competition. “Fragmentation” is an appropriate term for the second part of the book. It describes the commonality of each element in the university to drift away from a coherent vision, far from the dreams of early Christian educational thought and in disregard to the effort expended to establish universities.

Even the newly constructed multiversity, created by a fragmented soul, would fragment itself. The professor has lost sight of the unifying mission and is relegated to self-reliance and sustainability. The emphasis on research has made the professor servant to the institution and the national agenda, instead of to the wisdom, the soul, and humanity’s need to reflect the image of God. The curriculum has become more esoteric with departments functioning as silos, without any coherence with the Creator. Students have become consumers of student affairs/student services initiatives. Their emotional, physical, spiritual, and moral needs have been separated, served by different departments. The services they receive align to nationally desired standards, behaviors, ethics, and values, instead of with divine wisdom. Administrators are isolated from the community as leadership is specialized, decentralized, and fragmented from the image making process. Athletics has become the religion of the university, providing a source of growth, funding, energy, purpose, and identity. Institutional power and prestige are benefits of athletic commercialization and external contracts. Competition with other universities and businesses is a self-serving agenda. It is its own machine, loosely connected by fragmented parts.

In Part Three, the authors present a proposal for change in the differentiated elements outlined in the previous section. Using terminology like “reimagining,” the authors subconsciously shift the reader into the role of Hugh of St. Victor, dreaming of what a unified institution could accomplish if its theology, professors, administrators, and curriculum pursued being image bearers of God. Restoring the soul of the university begins with reimagining what it would take.

Foremost, theology would need to return to the institution, but not as the queen in the tower, but rather as the servant to the institution. As a servant, theology can restore intellectual pursuit, process, and product. Theology cannot rest in the confines of a silo, a department, or a single stakeholder group. The vocation of education needs to return

the professor to a profession of being an image bearer of God and to a practice transcending academic domains. Leadership needs to regain divine congruence between the narrative, symbols, and metaphors and the names, rituals, and stories they use. The disciplines need to work together and no longer quarrel over the spoils of enrollment. General education and the liberal arts need to free the individual to experience and imitate God. They need to create humility in students established in divine virtue. The co-curricular must form a community that protects all stakeholders. A greenhouse that exaggerates conditions for growth, softens external climate, and prepares the student for image bearing.

Overall, the book is an excellent and organized proposal for not only the existence of a university's soul, but also for the rise, fall, and future hope of the university. *A Christian Critique of the University* concludes with the question "What then can be done?" (1982, p. 109). For any stakeholder involved in higher education, this may be an answer. Agreement with the authors' few assumptions makes the book's position stronger. First, the philosophy described by Hugh of St. Victor is the premise from which the book launches. The reader is better served to agree with the purpose of education. However, if taken as only a historical perspective, the book still gives the reader understanding.

Second, to read this work is a decision to examine oneself, the Christian higher education institution, and the combination of both within contextual society. The reader will find a foundation to anchor drifting thoughts, a structure to organize perspective, and a path to follow. A reader looking to establish a secular soul, or center, to the higher education institution may stand at odds with the Biblical foundation for humanity and goal of the educational process. Without these, the process of restoring the soul may be lost. Last, the reader accepting the philosophical underpinnings and the divine purpose of man should be prepared to reflect on personal and professional elements. A cognitive process and behavioral practice may lead to an individual restoration of the soul and a clearer reflection of the Creator.

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The Cruciform Faculty: The Making of a Christian Professor. By Mark H. Heinemann, James R. Estep, Jr., Mark A. Maddix, Octavio J. Esqueda. Charlotte, NC: Information Age Publishing, Inc., 2016. 61 pp. ISBN 978-1-68123-679-7 (PAPERBACK) \$20.

*T*he *Cruciform Faculty*—by Mark H. Heinemann, James R. Estep, Jr. Mark A. Maddix, Octavio J. Esqueda—offers valuable insights in developing Christian professors today. The author’s foundational premise asserts a professor’s personal relationship with Jesus Christ transforms his or her profession into a calling, which informs and requires a course of action as a teacher, scholar, mentor, and servant. These very roles define the criteria by which most faculty are promoted and tenured in state and religious institutions. According to the authors, this book “provides a concise portrait of the general role of faculty from a distinctively evangelical Christian perspective, using the metaphor of being formed by the cross, that is, cruciform” (2016, p. xii).

To fill the role of professor, James Estep, Jr., encourages faculty to integrate their Christian faith with the various aspects of their personal and public lives. Challenging the secular teaching perspective, Estep asks: Do faculty acknowledge a calling on their lives or is teaching approached as career, and do faculty take on a pastoral role as a professor or is professorship a professional pursuit? Along with such questions, Estep offers practical advice on spiritual formation in various contexts.

Octavio Javier Esqueda reflects on essential principles for cruciform teachers. He recommends faculty develop a teaching philosophy underpinned by a Christian worldview informed by affirmations such as (1) academic inquiry is based on God’s truth, and all academic disciplines belong to Him; (2) teaching and learning are an indivisible process—an exchange within a community, where teachers and learners grow together; (3) faculty teach who they are through their transparency and interaction with students; and, (4) faculty demonstrate whose they are in their personal and professional demonstration of faith. Though mastery of content is important, Esqueda reminds faculty the goal of teaching is student learning. The way students learn should dictate the way professors

teach. The book would be strengthened by a further discussion on how to engage this generation through effective teaching strategies and best practices.

James Estep, Jr., next considers the Christian scholar. Faculty influence can help transform the academy and the Church. He contends faculty should be knowledgeable, current, and relevant in the classroom, academia, the church, and community. Their knowledge and wisdom combat anti-intellectualism found in the church and larger society. Estep articulates the challenges to the Christian scholar in publishing. Denominational publications can hold rigid, dogmatic positions resisting different perspectives and new findings. Novice scholars must find their niches within the publishing world where peers compete to voice their views and present their research. Finally, every academic institution has a culture with a given set of values, stated or implied. Research and scholarly publications may be institutional goals, but the lack of financial support or release time leaves the onus on the individual faculty member's initiative, time, and personal funding.

Mark Heinemann examines mentorship as "giving and receiving mutual help growing as learners and as persons on a spiritual journey" (p. 36). In such an exchange, both grow in their understanding of teaching and learning. Heinemann reminds faculty these relationships must be in trust-safe environment. He suggests mentors focus on foundational, life-changing principles that work in virtually all relationships, rather than a methodological approach alone. Heinemann notes the importance of seasoned faculty sharing research-based instructional strategies with their younger counterparts. Mentorship with students also should not be narrowly defined to subject matter, but have a broader scope, including study techniques, research, resume writing, and professional development. Such a relationship offers an excellent opportunity for further spiritual formation. Heinemann, citing Willimon and Naylor, reiterates all professors are "producers of character whether we like it or not" (1995, p. 122).

Mark Maddix defines the professor's servant role as helping the body of Christ by giving one's gifts and talents for the sake of others. Christian higher education often places service as one of the benchmarks for faculty promotion and tenure. Servant-minded faculty are willing to sacrifice to serve their institutions. Typical servant roles might include serving on and

leading committees; academic advising and mentoring; participating with students in extracurricular activities; and serving outside the institution in one's profession, church, and community. Service and service learning offers meaningful experiences for students and faculty alike. Partnerships with local agencies serving the community can transform both students and organizations. Interestingly, Maddix cites Greenleaf's *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness* (1977, p.164). He points out not all faculty are suited for this role of serving others and the institution. Greenleaf suggests some faculty are better suited serving through other pursuits, such as research.

Having guided faculty through the promotion and tenure process for over a decade, I found *The Cruciform Faculty: The Making of a Christian Professor* valuable. It's a primer for new faculty joining faith-based schools. It is especially helpful for prompting faculty coming from the secular academy into Christian higher education to reconsider their roles, including how they might relate to their students pastorally. The book offers readers the opportunity to consider matching their calling and gifting with various aspects of the cruciform faculty. The authors' reflections may offer a wider set of considerations for promotion and tenure committees within the Christian academy, and ones which intersect the integration of faith in the profession. The book can refresh veteran professors, reminding us of why we teach.

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Big Data and Learning Analytics in Higher Education: Current Theory and Practice. By Ben Kei Daniel, ed. Switzerland: Springer International Publishing, 2017. 272 pp. ISBN 978-3-319-06519-9 DOI 10.1007/978-3-319-06520-5 (HARDCOVER) \$89

The Scholarship of Teaching and Learning (SoTL) as defined by seminal author Ernest Boyer (1990) typically focuses on student learning in the classroom. Specifically, the question “Has learning occurred?” is answered by statistically examining data collected on students. For example, pre-/post-test results can be examined using a paired t-test to see if student learning occurred as a result of an assignment or activity. SoTL is important to faculty and administration alike because it provides a way to quantify what is happening with respect to pedagogy and student learning. It enables us to verify that learning has indeed occurred and then to share and disseminate that information to our peers so that other faculty may be encouraged to improve their pedagogy.

Since Boyer’s introduction of SoTL, much research and discussion has taken place regarding SoTL in the classroom. However, another question has arisen due to the abundance of available data today; that is, does SoTL extend beyond the classroom into the upper echelon of administration and supporting services (e.g., financial aid, registrar, institutional research)? I believe that the answer is yes, as long as the focus remains on teaching and student learning.

Throughout their college career, much information is collected on students. Administration and faculty alike use these “big data” sets to determine institution-specific KPIs (Key Performance Indicators). In the book *Big Data and Learning Analytics in Higher Education* (2017), editor Ben Kei Daniel refers to this as a “macro-level analysis” (pg. 2). Ideally, we can also determine how student learning can take place and help faculty best use all the resources available to them for the purpose of improving teaching (a meso-level analysis). In the classroom, scholarship can occur on a much smaller and more intimate level using simple statistical tools (a micro-level analysis). However, when dealing with big

data sets, this type of scholarship is referred to as “learning analytics,” which is the focus of the 15 chapters written by 32 educational research experts (272 pages) comprising Ben Kei Daniel’s timely book.

Higher education institutions (HEIs) typically utilize academic analytics to determine retention rates, graduation rates, attrition, and other program level metrics. While useful, these metrics do not adequately address the issue of SoTL in the classroom. Learning analytics, on the other hand, focuses on measuring, collecting, and analyzing teaching and learning level metrics that are indicators of student success. Thus, the learning analytics methods and examples in this book are extremely useful and insightful extensions of the SoTL methods in use today.

For example, many HEIs use learning management systems (LMS) such as Blackboard, Moodle, or D2L for course support and to track student interaction within the virtual classroom. With academic analytics, participation data collected from the LMS helps administration track student attrition for the purpose of developing an “early warning system” (EWS) that identifies this type of student and allows for early intervention, prevention, and appropriate resource allocation. Thus, student participation levels would be interpreted with respect to student retention and attrition. With learning analytics, faculty use this same participation data from the LMS at a more granular level—that is, at the student learning level. Here, the goal is to improve and/or optimize student learning and/or student learning behaviors so that the student can be more successful. Thus, participation levels would be interpreted as a learning metric along the lines of SoTL.

In the logical flow of research, data must be collected before it can be analyzed. In this book, the chapters logically flow from big data to learning analytics. This is helpful to the readers and leads them through the discovery process. The chapters on big data introduce the reader to basic concepts of big data in higher education, examining what is being done today and how to prepare future researchers for this type of data analysis. These chapters are easy to understand and useful for anyone interested in this topic. However, later chapters in this section delve more deeply into big data and discuss higher level concepts of data sources, data mining, data ecosystems, and domain ontologies, which may be somewhat overwhelming to the novice researcher.

In the second part of the book, the authors first examine the subject of learning analytics from an ethical perspective. The numerous ethical issues that arise when dealing with massive amounts of data make this section quite interesting, but with all this data, it is easy to forget about the individual learner. For instance, the benefits and risks to the individual as well as data governance and ownership are just a few of the ethical issues that are addressed. Another chapter in this section deals with the overall concept of big data and learning analytics, providing many insights into this topic. Later chapters in this section provide specific examples and case studies on implementing and utilizing learning analytics.

Daniel states that this book will be useful to educational researchers and others interested in utilizing educational data, and I agree with Daniel's assessment of his target audience. Indeed, many of the chapters provide a basic understanding of the concepts of big data and learning analytics; however, other chapters provide higher level analytical and big data topics that would be more useful to the experienced researcher. Thus, there is something for everyone in this book. While the chapters may seem disparate in topic and level of understanding, they all work together to give the reader a better understanding of learning analytics resulting from the collection of big data sets. I would recommend this book to any researcher who needs a good overview of utilizing learning analytics and big data to help students learn and succeed.

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A Future for American Evangelicalism: Commitment, Openness, and Conversation. By Harold Heie. Eugene, OR: Wipf and Stock, 2015. 176 pp. ISBN 13: 978-1-4982-0878-9 (HARDCOVER) \$40

Evangelicalism is engulfed with a diversity of understanding and practice that provides no end of controversy and conflict. In this milieu, Dr. Harold Heie sees a bifurcation of positions that perpetuates the issue: commitment and openness. The commitment side adheres to holding to a truth for which one would die, if necessary. The openness groups insist on inclusivity, recognizing the frailty and knowledge limitations of humans. By tackling this serious and complicated issue, Heie has thrust himself into the often bewildering world of American theology and spirituality with a courageous heart. Heie wishes to find a theological element, a “working center” that will “hold evangelicals together in the midst of great diversity in beliefs and ecclesiastical practices.” His solution is an identification of and participation in God’s Project of Reconciliation.

Though Heie is a mechanical and aerospace engineer by training and occupation, he identifies several major issues in evangelicalism that emerged from a conversation he hosted on his website involving 26 evangelical scholars. After such a rich contribution of understanding, Heie assembled the ideas presented and developed his thematic approach to a solution to our American theological dilemma. He believes that the “primary telltale sign of a vibrant American Evangelicalism in the future will be the practice of evangelicals creating welcoming spaces for respectful conversation with those who disagree with them.” Evangelicals should be able to “express their beliefs with deep conviction and, at the same time, show that they are open to listening to the contrary views of others and respectfully talking about their disagreements with the goal of gaining a better mutual understanding of Truth.”

In the first of the identified major issues, “Evangelicalism and the Modern Study of Scripture” (chapter four), Dr. Heie considers the issues to be focused on historical criticism, which tends to diminish the roles of the miraculous and the spiritual, in favor of human sociology. His conclusion to the matter counsels evangelicals to recognize the effects of

culture on our interpretations and understanding of Scripture, which suggests that Christians who see universal Biblical principles in a more literal sense may be contributing to the theological conflict. Clearly, culture does affect human hermeneutic and understanding of the Bible, and recognizing that influence helps greatly to get the Scriptural messages better, but there must be as well a recognition that (1) the Bible is a revelation of the nature of God, not a manual of operation nor a comprehensive history, and (2) there are universal principles that pertain to all people irrespective of culture, history, language, and traditions.

In “Evangelicalism and Morality” (chapter five), Heie attempts to focus on the practices of Christians rather than the theological aspects of ethics. All Christians, he suggests, should be willing to be kind to strangers, help each other in times of need, and not be concerned about the theological positions of people with whom we interact. Morality apparently only involves the actions of compassion toward other humans, not the identification of immoral behavior. Christian ethics must consider the biblical principles as guides for personal and social behavior. We can be kind and helpful to criminals, homosexuals, rapists, abortionists, and others whose behavior is destructive but we can never condone or approve of the moral position these people have taken, as they oppose biblical directives and principles. Generally Evangelicals stand on the side of the biblical condemnation which, in many non-evangelical eyes, creates an irreconcilable conflict.

Where there are people and human organizations there will always be politics. Many people wish to eliminate political considerations in life so there would not be emotional battles over the way “things are done.” In chapter 6, “Evangelicalism and Politics,” Heie sides with engaging those who disagree with us by patient listening and humility, seriously considering their views and desires. The Christian attitude should indeed be reflective of the fruit of the Spirit, but consideration must also be given to the consequences of allowing contrary political actions to dictate the political philosophy of society. Non-Christians do not honor Biblical values, and political activists who oppose Christian principles do not patiently listen and seriously consider evangelical social values. Power to control is the essence of politics, even in the Church. Power is not necessarily a negative factor. In America, someone or some group will have the

power to establish social practices, and evangelicals are willing to engage contrary social and political positions in order to ensure that Christian values are not abandoned in the behaviors of American society. Talk is one thing; the force of law another.

Again, Dr. Heie make some assumptions in his next section, “Evangelicals and Scientific Models of Humanity and Cosmic and Human Origins” (chapter seven), that evangelicals oppose science, which they most certainly do not. He does recognize that science is not Neo-Darwinian Evolutionism, materialism, scientism, and atheism. The problem has been the ascendancy of those philosophies into positions of recognition as “science” and the prominence of supporters of those views in media and education, which alarm evangelicals and cause mistrust in the intentions of advocates of those views. Evangelicals believe that either God created the world or He did not. A godless, purposeless universe makes all human value irrelevant. True “science,” which is the discovery and explanation of how the physical universe works should, as Heie says, be able to work with a religious paradigm. The major problem with dialogue in these two realms is the definition of terms. Neo-Darwinism, by definition, is godless, and thus cannot be compatible with Christianity. There is no Hegelian dialectic that can work in this case.

In the last issue of contention, “Evangelicals and Higher Education” (chapter eight), Heie seems to see Christian institutions of higher education as restrictive of the “Quest for Truth,” more determined to force adherence to certain traditional beliefs rather than allow for diversion. As that may be the case, the definition of “Quest for Truth” could stand some understanding. Many American liberal perspectives call for “change” as if that is the goal of greatest good for all societies. Not everything needs to be changed. There are some traditional Christian principles that must remain if American society will continue to be free and moral. Besides, the major obstacle to knowledge of Truth and wisdom has been secular higher education. Too many children of evangelicals have come back from college having abandoned Christianity because of the influence of non-Christian professors. Education is not valueless. The attack against Christian ideas and values is massive and relentless in American secular higher education, which does nothing to accommodate a patient listening and honest consideration of all views.

Finally, Dr. Heie advocates for Christian efforts to focus on reconciling all people to God as the center of evangelical action. Christians can be open to understanding the views of others and discuss differences as long as “others” have the same approach. We can appreciate difference (a hard thing for Americans to do about anything; just ask football fans) and respect the humanity of all people. After all, we are here to be reconcilers, ambassadors of God, ones who have seen the way out of our bondage to sin and have adopted the roles of healers. Heie primarily seeks to reconcile evangelicals to themselves, which indeed should be done. The Church is one, whether we admit it or not, and all our divisions are meaningless in the light of the world to come. We need not fight, but rather present our views. We need not discard the traditions and practices of other evangelical churches but appreciate the ways other evangelicals worship and serve God. We need not give up on the society and the “mistakes” of other evangelicals but work together to spread the Gospel and help strengthen the mission and ministry of all churches. Heie has pointed out American evangelical selfishness and narcissism, which evidently needs correction.

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