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Online Learners: A Study of their Advising Attitudes, Experiences, and Learning

by

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A dissertation submitted in partial fulfillment of the
requirements for the degree of

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in
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Abstract

Academic advising for online learners has been identified in prior research as an important student service. However, little research exists to assist advisers in knowing how best to serve this growing group. The purpose of this study is to close that research gap by determining if and how online and on-campus learners differ in how they rate the importance of various functions of academic advising as well as determining if their frequency of access to academic advising and source of advising information differed. Additionally, the research examines if the types and levels of learning for online learners varied by frequency of advising, source of advising information, and satisfaction with advising received.

Participants in the non-experimental, survey-based, exploratory research study include 6,368 undergraduate students pursuing a bachelor's degree at three public institutions including two four-year institutions and one community college. Participants received a survey asking them about their experiences with and attitudes towards academic advising. Results indicate that online and on-campus learners differ in how they rate the relative importance of the different functions of academic advising and that those differences are uniquely related to learners' status as online learners. Additionally, online learners reported more of the types of learning expected from academic advising when they received their advising from an adviser as opposed to advising tools (e.g., web sites, advising guidelines) or their informal social networks, when they were advised more frequently, and when they were satisfied with the

advising they received. Implications for practice and suggestions for future research are

discussed.

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Chapter 1: Introduction to the Research

Over the past several decades, the United States has undergone a significant

shift in both the types of occupational fields needing workers as well as the level of

education required to fill positions within those fields (Carnevale, Smith, & Strohl, 2010).

In their report on projections of jobs and educational requirements through 2018,

Carnevale et al. noted that as the U.S. recovers from the recession of 2007 the job

market and growth in occupational fields will look substantially different than they did

prior to the recession. The five occupational clusters that are projected to have the

fastest rates of growth all are strongly biased towards workers with Bachelor's degrees

and many of these occupational clusters will demand a Master's degree or higher,

particularly for higher level positions.

Using the state of Oregon as an example, the Lumina Foundation (2012)

reported that by 2018, 64% of Oregon jobs will require some postsecondary education.

The State of Oregon Employment Department (Krumenauer, 2018) reported that the

number of employers reporting difficulty in filling open positions requiring education

beyond a high school diploma or associate's degree rose from 48% in 2013 to 64% in

2016 and that the number of difficult-to-fill job openings has doubled in the years 2013

to 2017, almost all of which can be attributed to the need for job-seekers filling those

job openings to have education beyond an associate's degree. Perhaps unsurprisingly,

the counties with the lowest rates of postsecondary degree attainment are found in

rural areas with little to no access to traditional place-based higher education. There is

clearly a gap between the jobs being created and the numbers of workers capable of performing them.

Postsecondary education has also become the "threshold requirement for a middle-class family income" (Carnevale et al., 2010). Economists have reported that the middle-class has shrunk over the past several decades. Carnevale et al., suggested that the middle-class is shrinking with high school dropouts, high school graduates, and those with some college falling out of the middle-class into the lowest three deciles of family income while those with a Bachelor's or graduate degrees have either stayed in the middle-class or have increased their income into the highest three deciles of family income. Employers are looking for employees with increasingly higher levels of education and are paying them commensurately more.

The increasing need for postsecondary credentials has pushed many older, nontraditional learners back to school to obtain postsecondary credentials and many of these nontraditional learners choose online programs (C. Aslanian, 2001). Traditionally, distance learners have been older, married, have previously attended college, and are self-starters (Dabbagh, 2007). More recent research shows that this demographic continues to characterize distance and online learners today. Radford (2011) found that 15% of undergraduates 23 years of age or younger participated in distance education while 30% of those 30 years of age or older participated in distance education classes and programs. Radford also reported that distance learners were much more likely to be married, to have one or more dependents, and to be employed full-time when

compared to all other undergraduate learners. Diaz (2002) and Diaz & Cartnal (2006) found that online learners were more likely to have prior-college credit hours and a higher all-college GPA than learners in face-to-face classes. Noel-Levitz (2012) reported that fully 67% of 99,040 online learners from 108 institutions self-identified as female.

Given the tremendous employment and financial benefits that accrue to those with postsecondary credentials, providing greater access to educational resources is essential. While traditional brick-and-mortar institutions provide one viable and valuable path to postsecondary education, there is a need for more and more varied venues for learners, particularly those learners who are place- or time-bound due to work, family, or other commitments, to obtain higher education (Allen & Seaman, 2006; Inan, Yukselturk, & Grant, 2009). For an increasing number of learners online learning creates another venue with the flexibility to meet their learning needs.

Defining Online Learning and Learners

Moore, Dickson-Deane, and Galyen (2011) examined the terminology used within the realm of distance learning. In their review of literature, they found no consistency among researchers' and educators' use of terms such as distance education, distance learning, online education, online learning, or e-learning. Furthermore, Moore et al. found that in many cases the terms were used interchangeably. Moore et al. noted that the ambiguity in the use of the terms often led to confusing and sometimes conflicting findings as researchers often used the same term to refer to different educational delivery systems or even used terms interchangeably within the same

study. The commonalities among definitions of distance education and online learning

that Moore et al. found included an instructional relationship between two parties (a

learner and an instructor), involved instruction that occurred asynchronously (the

learner and instructor were not engaged in the learning/teaching interaction

simultaneously) or at different locations or both, and used some form of instructional

materials. Keegan (1996) suggested that distance education was an umbrella term and

that all forms of learning at a distance are offshoots of distance education. Thus, by

Keegan's definition, online learning is a form of distance education.

For the purposes of this study, I used the term online education or online

learning to refer to educational activities that take place through the medium of

networked technology and where the relationship between the instructor and the

learner is primarily mediated through technology. However, when summarizing or

describing the research of other scholars I used the original language of the author in

order to maintain integrity with the source. I attempted, when possible, to describe the

environment and the mode of instructional delivery to provide context for the reader.

I use the terms learner and student throughout this study. The use of the term

'learner' as compared to 'student' and 'learning' versus 'teaching' began shifting in the

mid-1980s and accelerated sharply in the 1990s (Haugsbakk & Nordkvelle, 2007). This

shift in language reflected the broader shift in education from the focus on the practice

of teaching and the instructional activity to a focus on the learning process and the

student or learner (Barr & Tagg, 1995; Biesta, 2009; Haugsbakk & Nordkvelle, 2007). The

purpose of these shifts has been articulated by theorists and researchers as redefining students as passive recipients of knowledge as a result of the teaching transaction to the "learner as an active constructor of his/her own learning" (Haugsbakk & Nordkvelle, 2007, p. 2). Because much of the literature on online learning uses the term 'learner,' I will use this term broadly throughout this study. However, when discussing the work of other researchers, I will utilize the terminology used by the researcher to maintain integrity with their own usage.

Online learning: Growth and issues

Online learning has grown tremendously over the past decade. In May of 2017, over 6.1 million students were enrolled in at least one online course and 31% of all higher education learners took at least one online course (Allen & Seaman, 2017). In comparison, in 2002, 1.6 million learners were enrolled in at least one online course and 9.6% of all higher education learners took at least one online course. In addition, more academic leaders see the value and importance of online learning. In 2002, less than 50% of chief academic officers viewed online learning as being a critical part of their long-term strategic plan for their institutions. By 2011, over 65% of chief academic officers agreed that online learning was critical to their long-term strategic planning (Allen & Seaman, 2011).

While enthusiasm and support for online learning has increased over the past decade, serious concerns regarding attrition and retention of online learners have caused some to question whether online learning truly meets learner needs (Diaz, 2002;

Diaz & Cartnal, 1999; Johnson & Willging, 2009). No national statistics on attrition and

retention of online learners exist because the lack of common metrics and the wide

diversity of program types makes comparisons difficult. However, both anecdotal and

single institution studies have reported attrition rates in online courses to be 10-20%

higher than in traditional face-to-face courses (Carr, 2000). For instance, a recent study

reported attrition in online Master's degree programs at one institution that offered

degrees in both on-campus and online modalities to be six to seven times higher in the

online program than in the on-campus program (Patterson & McFadden, 2009).

Successfully addressing issues of attrition and retention in online education is

imperative as faculty and administrators in higher education often view retention as a

proxy for quality (Boston, Ice, & Gibson, 2011; Diaz & Cartnal, 2006; Patterson &

McFadden, 2009). In addition, legislators, governing boards, and the federal

government have become increasingly focused on institutional accountability for

program outcomes including retention and graduation rates (Patterson & McFadden,

2009). While governmental agencies have generally remained aloof from the

accreditation processes for postsecondary institutions (Wolff, 2010), the agencies have

a strong voice through the allocation of state and federal student financial aid monies

and have increasingly expressed their concerns regarding the relatively low success

rates of online learning as measured by graduation and the high level of debt incurred

by students, particularly those enrolled in for-profit institutions (Epstein, 2010; Field,

2010, 2011). As a result of these concerns, some legislators have suggested the

possibility of governmental intervention in the accreditation process (Blumenstyk, 2011; Field, 2011).

While there exists some research into the number of learners who drop out of distance and online education classes and programs (Johnson & Willging, 2009), relatively little research has been conducted on the reasons why learners in online programs drop out. Carr (2000) suggested that nearly every instructor and administrator connected to online education has their own explanation as to why there is a higher attrition rate for online courses, but Carr asserted that the explanations generally fall into one of two camps. The first is that online learners dropped out for essentially the same reasons as learners enrolled in on-campus courses but did so at a higher rate due to greater interference from outside pressures such as families, work, and other obligations. The other camp suggested that the higher dropout rate is connected to the fundamental differences between the nature of a traditional face-to-face college program and an online program in that distance and online courses cannot provide the amounts and types of personal interaction that learners desire. There have also been suggestions that the reasons for attrition in online programs are more significantly connected to program and degree types than to student characteristics and thus no singular model or theory adequately explains the attrition issue in online education (Patterson & McFadden, 2009; Reynolds, 2003). While the causes of attrition for distance learners in general, and online learners in particular, are still in question, some have suggested strategies to address the online learning attrition issue through

providing effective student services (Cain & Lockee, 2002) and have further suggested

that student services can help online learners adjust to college and contribute to online

learners' personal and academic growth and success (Dirr, 1999; LaPadula, 2003).

　　　While there have been many anecdotal and narrative pieces written on the need

to provide effective student services to online learners, very little research has been

conducted that identifies the services online learners need and want and the most

effective manner to deliver these services (Lohsandt, 2005). Cain and Lockee (2002)

identified six student services they believe impact progress and completion for online

learners including academic support, academic advising, library support, career advising,

tutoring support, and mentoring support. Hsu and Hamilton (2010) suggested that

academic advising, bookstore services, and registration should be considered the

"minimum baseline" (p. 418) of services offered to online learners.

　　　Of the services suggested in existing research, distance and online learners have

consistently rated academic advising as one of the most important services they receive

from an institution. Pareitz (1997) in her survey of learners in ten community colleges

offering distance programs concluded from her data that in two-year institutions

academic advising is the most important service that distance learners will receive.

Dare, Zapata, and Thomas (2005) surveyed both on-campus and distance learners at

North Carolina State University to determine the level of importance they placed on

different student services and their relative satisfaction with those services. Distance

learners rated registration and records and faculty advising as the most important

services offered. Lohsandt (2005) surveyed 1,687 learners enrolled in an online education consortium in South Dakota on how they rated the relative importance of 21 different student service functions. Similarly to Dare et al., Lohsandt found that online learners rated the importance of academic advising second only to registration functions.

Academic advising has also been closely tied to learners' satisfaction with their institution (Peterson, Wagner, & Lamb, 2001) as well as other factors affecting retention such as goal commitment (Tinto, 1993) and the development of a significant relationship with a faculty or staff member at their institution (Pascarella & Terenzini, 2005). In a multi-institutional study of advising outcomes, Smith and Allen (2014) found that learners who reported higher levels of contact with their advisers were more likely to have a plan to achieve their educational goals (a measure of goal commitment) and to report that they had developed a relationship with at least one faculty or staff member that had a significant and positive effect on them. For online learners, advising is often seen as especially important because the adviser may be the only contact other than faculty who teach their classes that the online learner has with the institution after admission (Curry, Baldwin, & Sharpe, 1998).

While it is clear that both online learners and on-campus learners have identified academic advising as important to them, there has been some debate regarding what it is about academic advising that learners find valuable and what kinds of advising most impacts learners (Hemwall & Trachte, 2003; Lowenstein, 1999; Smith & Allen, 2006).

Historically academic advising has been conceptualized as consisting of two primary approaches: developmental and prescriptive (Smith & Allen, 2006). Smith and Allen describe developmental advising as consisting of student-centered practices that

- acknowledges the individuality of students,

- assists students with integrating life, career, and educational goals,

- helps students connect curricular and co-curricular aspects of their educational experience, and

- provides scaffolding that gives students opportunities to practice decision-making and problem-solving skills in an atmosphere of shared responsibility.

Conceptualized in this fashion, developmental advising is seen as a form of instruction with advisers focused on the development of their advisees. In contrast, prescriptive advising is seen as a form of advising where the adviser is focused on dispensing accurate information and telling learners what they need to know and how to do it rather than allowing learners to practice decision-making skills or share responsibility for learning.

Smith and Allen (2006) disagreed with the binary conceptualization of academic advising suggesting instead that elements of both developmental and prescriptive advising are needed and desired by learners. In their review of the academic advising literature since 1972, Smith and Allen identified 12 academic advising functions that

operationalize five domains that they uncovered in the literature as being critical to

quality academic advising. The five domains identified by Smith and Allen are:

- *Integration* of the student's curricular and co-curricular experiences into a

  meaningful whole that connects academic, career, and life goals,

- *Referral* to campus resources that address academic and non-academic

  concerns,

- *Information* about how things work at the university and about degree

  requirements,

- *Individuation* or taking into account the student's skills, abilities, and interests as

  well as knowing the student as an individual and,

- *Shared responsibility* or helping students develop planning, problem-solving,

  and decision-making skills so that they come to assume greater responsibility for

  their own education.

In addition to the 12 functions, Smith and Allen (2014) developed eight learning

outcomes associated with quality academic advising that they suggest are identified

within the advising literature as being important to a learner's success at a college or

university. Table 2 on pg. 55 lists the advising learning outcomes along with full

descriptions. The eight outcomes include cognitive outcomes including: knowing

requirements to fulfill their degree or academic goals, they understand how things work

at their institution, they know where to find help at their institution when they need it,

they understand how their academic choices connect to their goals, and they have an

educational plan to achieve their goals. The other outcomes include more affective outcomes including: valuing adviser-advisee relationships, supporting mandatory advising, and agreeing that they have a significant relationship with a faculty or staff member. Smith and Allen conceptually linked the eight learning outcomes to the literature on student success and retention. Smith and Allen found that, even when controlling for a variety of demographic and individual learner characteristics, learners with higher levels of contact with their adviser also had higher scores on measures of all eight learning outcomes.

In spite of the importance online learners place on academic advising and the links between advising and factors impacting student retention, very little research has been conducted that provides direction on advising online learners (Cain & Lockee, 2002; Curry, 2003; Curry et al., 1998). In addition, virtually no theoretical models currently exist for organizing quality academic advising practices for online learners (Rimbau-Gilabert, Martinez-Arguelles, & Ruiz-Dotras, 2011). Without further research into the advising needs of online learners and whether those needs are being met, advisers and those overseeing advising functions are left using advising models and practices that may not best meet the needs of this distinct population.

Statement of the Research Problem

While the numbers of learners enrolling in online learning has increased significantly over the past decade, serious concerns regarding the high level of attrition of online learners continue to perpetuate the perception of low quality that often

plagues online learning. There is evidence that offering effective student services can help address retention issues with online learners. Existing research on what online learners desire from student services suggest that not only are student services in general important to online learners, but that specific student services, academic advising among them, are rated as particularly important to these learners (Dare et al., 2005; Lohsandt, 2005). However, when compared to the body of literature and research on the instructional components of online learning, the extant body of literature on providing student services is scant, particularly regarding advising online learners (Curry, 2003, 2013; Curry et al., 1998; Dare et al., 2005; West, 2011). Research on academic advising for on-campus students suggests that academic advising can have an influence on improving academic performance levels as well as the retention of learners (Cain & Lockee, 2002; Watson, 1994) however, Smith and Allen (2014) found little empirical evidence outside of a few single-institution studies that substantiate the link between academic advising and retention. Smith and Allen (2006) also found that the 12 academic advising functions they identified were important to on-campus learners. In addition, for on-campus learners higher numbers of contacts with academic advisers result in higher scores on measures of learning outcomes associated with academic advising (Smith & Allen, 2014). There is less known, however, on how academic advising impacts online learners academically and what effect academic advising practices may have on attrition and retention for online learners. Are the academic advising functions as important for online learners as they are for on-campus learners? Does increased

contact with an academic adviser predict higher scores on learning outcome measures for online learners similarly to on-campus learners? In an era of constrained fiscal and human resources in higher education, understanding how academic advising impacts the experience, learning, and retention of online learners will be helpful to institutional leaders in appropriately allocating resources to help online learners succeed.

Purpose of the Study

Although it has been the findings of previous research that student services, and academic advising, in particular, are important to online learners, there is little research that can help practitioners understand how best to serve online learners. The purpose of this current research study is to address this gap in the literature by examining the advising attitudes, experiences, and learning of online learners. For this study, online learners were defined as degree-seeking students using online learning as their primary mode of instruction or who enrolled specifically in a degree program offered through an online modality.

Significance of the Research

Considering the importance that online learners place on academic advising and the potential role it plays in retention, very little research exists specifically in the field of academic advising for online learners (Cain & Lockee, 2002; Curry, 2003, 2013; West, 2011). Additionally, the little data that does exist on academic advising for distance and online learners are from institutional perspectives rather than the learner perspective and Curry (2013) and Curry et al. (1998) suggested that future studies specifically seek

out data from distance learners on "which academic advising services students want and how well these students' needs are currently being met" (p. 51). This lack of empirical research on the advising wants and satisfaction of online learners along with how they differ from on-campus learners means that practitioners have little evidence upon which to base their practice. What little research does exist either examined student services broadly or described how some institutions provided advising and other student services with little information on the effectiveness of their practices. The multi-institutional study presented here helps to fill the gap in empirical data on advising for online students by addressing the research questions that follow.

Research Questions

1. Do online learners attribute the same degree of importance to various kinds of academic advising as do on-campus learners?

   a. In what ways do the two groups of learners differ in how important various kinds of advising are to them?

   b. In what ways do online and on-campus learners differentiate among the importance of various kinds of advising?

   c. If differences are observed between the importance online and on-campus learners attributed to the various kinds of advising, are these differences unique to their learning modality (online vs. on-campus) and not other differences inherent in the two groups?

2. Are there differences in the advising experiences between online and on-campus

    learners in:

    a. How often they get advising and,

    b. Where they get their information about classes to take?

3. For online learners, what relationship, if any, exists between advising learning

    outcomes and online learners' advising experiences, that is,

    a. Whether and how often they get advising,

    b. Where they get information about classes to take, and

    c. How satisfied they are with the advising they receive?

Methodology

The study described here is a non-experimental quantitative research study. This study examined survey data collected by a nine-institution research collaborative in Oregon lead by Janine Allen and Cathleen Smith, both faculty members at Portland State University. Learners at the nine institutions were invited to complete the survey instrument, *Inventory of Academic Advising Functions- Student* (2006), which was administered using a web-enabled platform. The survey asked learners about their attitudes toward, and experiences with, academic advising at their respective institutions. In addition to the data received through the survey, demographic and academic data regarding the learner participants was obtained through the institutional research offices at each institution. From the sample of survey participants, I selected learners from the three institutions who participated in the research collaborative that

offer fully-online degree options. These institutions have historically been considered leaders in distance and online education in the state.

Summary

While online learning has grown substantially in the number of learners that it serves, it has not substantially improved in retaining many of those learners. Effective student services including quality academic advising have been touted as ways institutions can improve the retention of online learners. However, little extant data exists on how online learners experience academic advising and what they are learning from those encounters. Additionally, little is known about what advising functions are most wanted by online learners and their satisfaction with the advising they receive on those functions. This research is well-positioned to provide some of those data from a learner perspective rather than the institutional perspective offered by the literature currently.

In Chapter 2, I provide a review of the literature regarding the evolution of online learning, student services, and advising and integrate them in such a way as to provide a foundation for new research. In Chapter 3, I describe the methodological approach including more detailed information regarding the selection of methodology, participant selection, procedures, the survey instrument, and data collection and analyses. In Chapter 4, I discuss the results of the statistical analyses of the data. Chapter 5 contains the findings, their implications, limitations, and directions for future research.

Chapter 2: Introduction to the Literature

Given the lack of research and literature on advising online learners, it is

necessary to cast the net wide and draw upon literature and research from a broader

perspective. In this chapter, I discuss the extant literature on academic advising for

online and distance learners, broader issues of definitions and history of online learning,

student services to online and distance learners, and academic advising generally.

I used several methods to gather literature for review. First, I conducted a

general review of journal titles related to online learning and distance education

including a scan of article titles looking for those that may have some relevance to the

topic at hand. This generated relatively few pertinent results. Subsequently, I conducted

a computer database search using several database providers including, but not limited

to, EBSCO, ERIC, Education Full Text, Proquest, Google Scholar, and Education Research

Complete. Keywords included: distance learning, distance education, online learning,

advising, academic advising, academic counseling, and student services. One of the

primary sources of literature, however, resulted from a careful review of the reference

sections of important articles and books and the use of the "Cited By" function in

Google Scholar. Use of these two strategies yielded the highest quality and most

pertinent literature.

In this chapter, I build on the themes found in the literature search providing a

scholarly context to the issues of academic advising and online learning. Following this

introduction, the content of this chapter includes 1) definitions and history of distance

education and online learning, 2) a discussion of what student services are important to

online learners and delivery methods for those services and, 3) a discussion of academic

advising.

Defining Distance Education and Online Learning

One of the first issues when discussing distance and online education is

definitional. McGivney (2009) defined distance education as an education where

planned learning occurs in a different location from teaching and requires special course

design or planning to achieve. Holmberg (1977), one of the pioneering theorists in

distance education (Garrison, 2000), defined distance education as follows:

> The term "distance education" covers the various forms of study at all levels
>
> which are not under the continuous, immediate, supervision of tutors present
>
> with their students in lecture rooms or on the same premises, but which,
>
> nevertheless, benefit from the planning, guidance, and tuition of a tutorial
>
> organization. (p. 9)

Finally, Bower and Hardy (2004) were more specific in their discussion of online learning

and defined it as the "acquisition of knowledge and skills through mediated information

and instruction, encompassing all technologies and other forms of learning at a

distance" (p. 5).

An examination of the above definitions revealed two key elements. First,

distance learning involves a physical separation of the learner and teacher. Because of

this separation, the teaching behaviors and learning behaviors which typically occur

concurrently in a traditional classroom, occur separately from each other in distance education. Secondly, distance education is a specially planned activity where the information or learning the tutor or instructor intends to happen is packaged and delivered to a learner who then independently undertakes the learning activities without the immediate supervision of the tutor or instructor.

Not unexpectedly, this separation of the teaching and learning behaviors as well as the physical separation of instructors and learners is a major source of the discomfort and suspicion with which many in higher education view distance education. Larreamendy-Joerns and Leinhardt (2006) suggest that these differences from how learning "naturally" (p. 570) occurs requires that distance education make additional justifications for itself such as providing greater access to educational opportunities or encouraging life-long learning, justifications not generally required of traditional classroom pedagogies. Additionally, many faculty, in particular, are suspicious of the level of quality that can be obtained when teaching and learning are separated especially as many of the issues of quality revolve around "the limitations inherent in different delivery technologies as they seek to replicate critical features of classroom instruction" (Larreamendy-Joerns & Leinhardt, 2006, p. 579). These issues of quality are critical as quality has historically been seen as essential to full academic acceptance (Institute for Higher Education Policy, 2000).

However, the most recent direction in online learning research has been to rethink the framework of overcoming geographical distance and learner independence

being the *sine qua non* of online learning (Garrison, 2011). Rather, Garrison, among

others, have sought to reconceptualize online learning as developing communities of

learners who freely and actively share knowledge and interact with each other and with

facilitators who help to guide and develop appropriate learning outcomes. To this end,

Garrison defined e-learning as "electronically mediated asynchronous and synchronous

communication for the purpose of constructing and confirming knowledge" (p. 1).

Synchronous in this context refers to instructors and learners interacting in different

places but at the same time. In contrast, asynchronous refers to instructors and learners

interacting in different places at different times. He continued by describing the purpose

of e-learning as creating a community of inquiry that is not bound by time or location

through the use of networked computer technology. Implicit in this definition and

purpose is the element of interaction that is expected. How interaction and not

independence came to be the essential component of e-learning or online learning is

discussed in the next section.

History of Distance Education

        The progression of distance education through history has often been described

as being comprised of three generations with each generation being connected to

innovations and developments in the ability to communicate at a distance (Garrison,

1993; Sumner, 2000). Garrison (1993) described the generational model explaining that

each successive generation did not discard the elements of previous generations, but

built upon those developments. He stated, "The reality is that new and current

technologies are hierarchically combined to increase technological capacity and choice

in designing effective distance education" (p. 17). The combination of technologies as

the generations evolved also meant that it is difficult, if not impossible, to clearly and

definitively categorize pedagogical methods or approaches into one generation or the

other. As Garrison suggested, these generations are "ideal types" (p. 17) however they

are useful in understanding how each successive generation resulted in changes to the

paradigm of distance education.

First generation. The first generation of distance education relied on

correspondence courses via mail or similar delivery systems (Garrison, 1993;

Larreamendy-Joerns & Leinhardt, 2006; Nipper, 1989; Sumner, 2000). In the United

States, two of the seminal enterprises in correspondence learning included Anna Eliot

Ticknor's "Society to Encourage Study at Home" aimed primarily at home-bound women

starting in 1873 and University of Chicago president William Rainey Harper's university

extension, Department of Home-Study, which is the first known correspondence

education program to be connected to a formal university (Larreamendy-Joerns &

Leinhardt, 2006; Sumner, 2000). Both institutions worked by mailing a syllabus and

readings to the students who then worked at their own pace to complete the materials

and upon completion would mail the materials back to the institution. Once received,

the materials would be reviewed and feedback mailed back to the student.

Concerns about access and the democratization of education undergirded these

initial efforts at distance education (Garrison, 1993; Larreamendy-Joerns & Leinhardt,

2006; Sumner, 2000). Correspondence courses were relatively low cost as they relied

heavily on the mass production of course materials made possible by increasingly

inexpensive printing technology available in the 19th century as well as effective and

fairly rapid mail delivery systems that became available at about the same period of

time (Sumner, 2000). Larreamendy-Joerns & Leinhardt wrote that the "Society [to

Encourage Study at Home] was groundbreaking in its means, for it made used [*sic*] of

the ubiquity of correspondence to counter the American rendering of the Victorian

family and endowed women with a liberal education outside the campuses of elite

women's colleges" (p. 574). Richard Moulton (1917), another groundbreaking educator

from the University of Chicago wrote, "A university remains in an imperfect stage until it

realizes how it must extend its influence to the whole body of people; how it must

extend its education to the whole period of human life; and how it must bring its high

ideals to bear upon all the vital interests of mankind" (p. 59). As both quotes illustrated,

liberating education from campus-bound classrooms and democratizing education were

key elements in the decision to offer correspondence courses.

    While correspondence courses constituted a fairly significant shift in the

provision of education to a broader range of people, the elements that made it possible,

printed material and the mail system, were also its greatest limitations (Garrison, 1993;

Sumner, 2000). It was difficult, if not impossible, to maintain any level of sustained

communication between the instructors and learners and the very individualized nature

of the learning had the effect of isolating and insulating learners from other learners as

well. Sumner suggested that this isolation of learners from each other also limited the

true democratizing nature of education itself. By limiting "communicative action" (p.

275) in support of social change, correspondence study also limited the potential social

mobility of its participants.

Second generation. There are differences in how researchers have defined

second generation distance education. Sumner's (2000) and Nipper's (1989) definitions

of second generation technology was based on the integrated use of multiple forms of

media ranging from improved printed materials to television and radio productions. The

quality of teaching materials during this period increased greatly as well as the speed at

which the materials reached the learner. In the case of television and radio, the speed

could be essentially instantaneous. However, while the use of multimedia expanded the

reach of distance education, the communication remained largely one-way with

learners remaining isolated both from the instructor and from other learners. Sumner

argued that both first and second generation distance education led to the

"professionalization, legitimation, commodification and instrumentalization of certain

forms of knowledge" (p. 277). These forms of knowledge excluded knowledge that was

developed from people learning together to develop socialized forms of knowledge but

rather promoted "system-serving" (p. 277) forms of education such as accreditation,

licensing, and corporate human resource development.

Garrison's (1985, 1993) definition of second generation distance education is

substantially different from Sumner (2000) and Nipper (1989). Garrison stated that the

second generation of distance education came with the advent of teleconferencing. Now, rather than distance education being primarily print-based, teleconferencing opened the opportunity for real-time communication between instructors and learners and, just as importantly, communication amongst learners. Learners and instructors were now part of a dynamic learning group where knowledge and understanding could be collaboratively created and validated. What learners gave up was the near-total control they had in first generation distance education to decide when and where they learned as teleconferencing required access to the telephone and participants coming together at the same time. However, learners gained greatly from the increased quality of interaction between instructors and learners. Garrison (1993) suggested that "teleconferencing represented a 'paradigm' shift in the quest to provide sustained interaction and ultimately greater control for both teacher and student over the educational transaction at a distance" (p. 18). While the impact of distance was not eliminated, it was mitigated by teleconferencing.

Third generation. Third generation distance education is based on computer-mediated communication (CMC) also known as online learning or e-learning (Garrison, 1985, 1993; Nipper, 1989; Sumner, 2000). Online learning represented a significant sea change in the conceptualization of distance education. Both first generation and second generation distance education focused on the nearly pure transmission of knowledge to learners in most cases while the organizing structure of online learning was connection and communication. Even Garrison's (1993) conception of second generation as

teleconferencing was significantly enhanced by adding additional methods of

communication through both real-time and asynchronous communication capabilities

for both instructors and learners. Online learning combined the advantages of print,

television, radio, and teleconferencing into a single platform.

Truly the collaborative element of online learning is the key to third generation

distance learning. Understanding the history of distance education through the three

generations is not simply a didactic exercise, but rather an attempt to understand the

evolution of distance education in such a way that highlighted the broad pedagogical

issues undergirding education generally. As Nipper (1989) argued, first and second

generation distance education processes and available technologies represented a

particular way of viewing the teaching and learning process. He stated:

Teaching is the process of structuring and distributing information about certain

subjects in the form of printed and/or broadcast learning material.

Communication takes the form of approving or disapproving comments on the

answers given by students to the questions on pre-printed assignments. This

type of communication is in some cases taken care of by computers which mark

students' assignments.

Learning is the acquisition of the information given by the study material.

What the learner communicates is what he/she supposes to be the right answers

to the questions in the pre-printed homework assignments. (p. 64)

Nipper's view suggested a distance learning model that was not only individualistic but anti-social. This was in stark contrast with third generation distance education that described learning as a "social process" (Garrison, 2011, p. 64) that moved the focus of pedagogy away from mitigating the distance between instructors and learners as well as among the learners towards placing the focus on the interactions among instructors and learners in creating collaborative constructivist communities of learners.

This shift from one-way communication to socially created knowledge was not restricted to distance education alone. Barr and Tagg's (1995) seminal article on making the shift from teaching to learning spoke to many of the same issues as were being addressed by the distance education community. Barr and Tagg outlined the differences between the purposes of instruction-centered practices and learning-centered practices. Under instruction-centered practices, they listed descriptors such as "deliver education" and "transfer knowledge" (p. 16). In contrast, in the learning-centered column Barr and Tagg included descriptors such as "produce learning" and "elicit student discovery and construction of knowledge" (p. 16). A point could be made, perhaps provocatively, that there is a great deal of similarity between first and second generation distance education and the instruction-centered paradigm as outlined by Barr and Tagg as well as similarities between online learning/third generation distance education and the learning-centered paradigm.

There is some dispute regarding the definition of third generation distance education. While many have conflated online learning and distance education, others

have argued that online learning and distance education are not necessarily the same

phenomenon (Garrison, 2011; Guri-Rosenblit, 2005, 2009; Guri-Rosenblit & Gros, 2011).

Garrison, who authored the original framework of the three generations of distance

learning, more recently argued that online learning had a different origin from

mainstream distance education and actually arose from a different field of theory and

practice where "distance has become but a relatively minor structural constraint in

providing a quality, highly interactive learning experience" (Garrison, 2011, p. 2).

Garrison suggested that rather than focusing on distance, learner control, and

autonomy, online learning had its origins in collaborative constructivism and the

combination of independence through asynchronous communication and interaction

between learners and between instructors and learners using the tools of computer

conferencing. Guri-Rosenblit and Gros (Guri-Rosenblit, 2005, 2009; Guri-Rosenblit &

Gros, 2011) was more vehement in their separation of online learning and distance

education. She argued that distance education can be done without online learning and

that online learning can be done without distance education and that conflating the two

terms diminishes the power of hybrid or blended learning or even the effective

integration of online learning technologies into traditional on-campus coursework.

    While Guri-Rosenblit and Gros' (2011) argument is compelling, they did

acknowledge that, for at least the North American community, well over 90% of

distance education is done through online learning. Guri-Rosenblit (2009) also made a

strong argument that the lack of clear definitions around terms such as e-learning,

online learning, hybrid learning, instructional computing technology, CMC, and other

terms made the construction of a comprehensive conceptual framework for research

into online learning difficult if not impossible. However, her argument weakened when

she suggested that those who defined online learning as third generation distance

education intended it to mean that online learning as a paradigm shift in distance

education completely superseded all other forms of distance education. As was stated

earlier in this section, the definitions of the generations of distance education are ideal

types and the advent of the next generation does not mean discarding elements of the

prior generations. Indeed, the very term generation implies building upon or elaborating

on the generations that have come before. Distance education done without online

learning is first or second-generation distance education. Distance education done

through online learning represents third generation distance education. Online learning

can also be done on-campus in hybrid or integrated technology classrooms. Calling

online learning the third generation of distance education does nothing to diminish the

potential power of the paradigm of connected learning through computer-mediated

communication.

In summary, describing the history of distance education through the organizing

framework of the three generation model (Garrison, 1985) highlights the changes

between generations in how distance education was conceptualized and practiced. In

particular, third generation distance education or online learning represented a major

paradigmatic change as it has the capacity to reduce the effects of distance, both

physical and social, and shifts the focus of learning to creating quality interactions

amongst learners and between instructors and learners. While the shift in focus towards

greater interaction in learning is crucial, as crucial for many online learners is the

fostering of quality interactions among student services professionals and online

learners (Cain & Lockee, 2002). As providing effective student services has been

recognized as supporting the academic success of learners, both online and on-campus,

the lack of research into what services are most needed by online learners as well as

how best to provide those services represents a significant gap in the body of

knowledge concerning online learning.

Student Services for Online Learners

For most students attending a college or university on-campus, student services

such as admissions, financial aid, counseling, academic advising, and student activities

are available and easily accessible (LaPadula, 2003). However, many of the services that

are often considered as essential student services to on-campus learners are either not

available or not readily available to online learners (K. Johnson, Trabelsi, & Fabbro,

2008; Moisey & Hughes, 2008). In addition, there is a paucity of empirical research on

both the relationship between student success and effective student services for online

students as well as how best to provide those services (Cain & Lockee, 2002; Crawley,

2012; Moisey & Hughes, 2008; Raphael, 2006; Rimbau-Gilabert et al., 2011).

Even though little research exists regarding student services to online learners,

the inclusion of student services is still seen as an essential element of providing a

quality educational experience. Hrutka (2001) stated that "Excellence in education

means much more than course delivery. An entire support system of academic and

student services must go hand in hand with teaching and learning" (para. 2). In 2006,

the Council of Regional Accrediting Agencies, a group consisting of the regional

accrediting agencies that accredit the majority of public and both for-profit and non-

profit private educational institutions in the United States issued their "Guidelines for

the Evaluation of Distance Education (On-line Learning)." These guidelines were

established to be used in coordination with existing regional standards as established by

the regional associations. Guideline seven read, "The institution provides effective

student and academic services to support students enrolled in on-line learning

offerings" (p. 5). As an example of evidence for meeting guideline seven, institutions

should be able to establish that "students in on-line learning programs have adequate

access to student services, including financial aid, course registration, and career and

placement counseling" (p. 5) and that "the institution provides support to students in

formats appropriate to the delivery of the on-line learning program" (p. 5). This

recognition of the importance of student services to online learners is invaluable as it

should cause most institutions to focus at least some attention to the providing effective

student services to online learners.

However, the interpretation of adequate access to student services has been

fairly ambiguous with most institutions interpreting adequate access as being essentially

an "enrollment management-plus model" (Dare et al., 2005, p. 41) which involved

providing only the typical enrollment management services including admissions and

registration. In addition to these services, some basic academic support services such as

libraries and academic advising were generally offered to online learners. Very often

few other student services were offered to online learners. In their literature search of

support services for online learners, Dare et al. found no studies that determined what

might be considered a full complement of student affairs programs to online learners

beyond the minimal transactional services required to be considered a student at the

institution.

Beginning in 2000, the Learn Anytime Anywhere Partnership (LAAP) funded by

the US Department of Education provided a grant to the Western Cooperative for

Educational Telecommunications (WCET) in partnership with three postsecondary

institutions and a corporate partner for a project entitled, "Beyond the Administrative

Core: Creating Web-Based Student Services for Online Learners" (Shea, 2005). The

purpose of the grant was to establish that online student services should be offered to

learners and to develop a set of best practices to guide implementation. The LAAP

partnership developed a set of five "suites" (p. 16) that contains the collection of

services that online learners should receive. The five suites included an administrative

core along with academic, communications, personal services, and student communities

suites. Centered within the five suites of student services were the student and the

curriculum demonstrating that the services should be student-driven keeping the

student and academic curriculum at the center of student service.

Along with the suites of student services that should be offered to online learners, the LAAP partnership also identified seven best practices in providing those services for students (Shea, 2005). Those seven included:

1   *Student-centered.* Services offered to students should be designed from the student's perspective and use language that is familiar to them instead of institutional language.

2   *Blended.* Student services are often offered in a compartmentalized and fractured format. An example of blending student services is an enrollment services model that blends admissions, registration, financial aid, and student accounts into a "one-stop shop" offering for students to receive seamless service from the institution.

3   *Personalized.* Students who have grown up in the age of computers expect information to be personalized to their needs. There is an expectation that the information they receive will be not be generic information sent to all students but personalized information suited specifically to their needs.

4   *Customized.* Students expect to see not only information that is relevant to them but to find all of the information in one location.

5   *Customizable.* Students familiar with computers and network technology expect to be able to customize their interactions with institutional web sites. From simple changes such as color or pictures to the ability to add different modules

with different configurations in their personal portal, students want to be able to make their information sources individualized to their own specifications.

6   *Convenient.* Many students, particularly online students, are part-time rather than full-time. With many of them working full-time, offering services only during business hours significantly limits access to these students. At minimum, extending hours into evenings and weekends helps create additional opportunities for access. Best practice would be to provide some access to key services 24/7.

7   *Just-in-time.* Many students are overloaded with information from a variety of sources. Institutions that can use technology to provide information to students as they need it by tracking requirements and other needed engagement by the student will help to ensure their students remain engaged.

Like all frameworks and best practices individual institutions will need to adapt them to fit their own institutional context, but the both the framework and best practices outlined by Shea (2005) were intended to be broad enough to fit most programs serving online students. While the WCET suggested that all services that are offered to on-campus students be offered to online students, Ryan (2001) suggested alternatively that not all services are necessarily expected or used by online learners. To this end, some researchers have looked specifically at what services are most desired by online learners and, in some cases, satisfaction levels associated with those services.

LaPadula (2003) conducted a survey of online students at the New York Institute of Technology to determine their level of satisfaction with the student services that were offered to them as well as their desire for additional student services. Student services provided at the time of the study included library, admissions, textbooks, technical assistance, prior learning assessment, academic advising, financial aid, bursar, registrar, and a student commons (an online discussion board). For each of the listed services, LaPadula asked respondents to rate their satisfaction with it using a six-point Likert-type scale from very dissatisfied to very satisfied. The number of responses in the dissatisfied range of scores were so few that LaPadula chose to categorize the responses into either dissatisfied or satisfied for all the responses. Respondents were most satisfied with the library with a 97% satisfied rating and the lowest rated service was the student commons, an online bulletin board, with 73% of respondents satisfied with the service. Eighty-five to ninety percent of respondents rated academic advising as satisfactory, a ranking that placed student satisfaction with academic advising as the 6th rated service of the ten services rated. When asked what other services online students would like to see, LaPadula reported that they would like additional social services such as student activities, student newspapers, academic clubs, and personal/mental health counseling. However, the actual percentages showed that (25%-38%) responded with a "yes" response for these services. The sample size of the survey was quite small (N=91) and limited to only online students at the New York Institute of Technology.

In reviewing the limited literature on student services to online learners, Dare et al. (2005) found a gap in research regarding the connection between student affairs and distance education. In an attempt to fill in this gap, Dare et al. surveyed both distance students and on-campus students at North Carolina State University. The survey was administered to all distance learning students who were enrolled solely in online classes and to a sample of on-campus students who were matched to the distance students based on gender and ethnicity. The survey administered to distance students contained five sections including: specific experiences as a distance learner, technology skills and availability of Internet connections, sense of connection with others at the university, communication preferences in communicating with offices at the university, importance and satisfaction with various student services, and importance and likelihood of use of services and programs not then available to distance learners. Surveys administered to on-campus students omitted the first section on distance learning experiences as well as the section concerning importance and likelihood of using services not then available to distance students.

The research found statistically significant differences between the distance students and the on-campus students on the majority of questions that comprised the sense of connection section of the survey (Dare et al., 2005). On-campus students generally reported that feeling a sense of connection was of greater importance than did the distance students. Conversely, distance students were significantly more satisfied with their sense of connection than were on-campus students. The only areas

where the researchers did not find statistically significant differences were in the

satisfaction ratings with connection to other students and connections to academic

advisers. Both distance students and on-campus students were equally satisfied with

those two types of connections. The greatest differences between distance and on-

campus students in importance ratings were in areas not traditionally offered to

distance students. Examples of these services not offered to distance students included

the student center, student housing, and student organizations which distance students

rated as less important than on-campus students. Distance students were most

concerned about services such as registration, financial aid, and advising when

compared to on-campus students. When asked about whether they would access

services not currently offered such as club sports, fitness centers, counseling center, or

health services, most distance students reported that it was unlikely or very unlikely

that they would use those services. As with the LaPadula (2003) study, the single-

institution nature of the study may limit the generalizability of the results.

Lohsandt (2005) in her dissertation research, surveyed students enrolled in the

Electronic University Consortium (EUC) of South Dakota. The EUC was formed to provide

a single source of information about online programs offered by the six public

universities in South Dakota. Her survey included responses from 1,687 students

enrolled in online programs through the EUC during Spring and Summer of 2005 with an

11.7% response rate. The survey consisted of four primary sections: general

information, demographic information/learner characteristics, importance and

satisfaction ratings of various student services, and finally, questions regarding how

online students preferred services be provided.

Lohsandt (2005) reported that overall students rated registration services (4.30

on a 5-point scale) and academic advising (4.10 on a 5-point scale) as being the most

important services offered with academic advising being more important to degree-

seeking students than non-degree seeking students. While degree-seeking students

reported that academic advising was highly important to them, they rated their

satisfaction in the middle of the satisfaction scale (2.95 on a 5-point scale). Additionally,

students rated activities normally associated with on-campus enrollment (e.g., student

union, student activities, and counseling services) at the lower end of the scale for both

importance and satisfaction. The online students also expressed that these latter

services are appropriately offered on-campus or in-person only.

Using a similar approach as Dare et al. (2005) and Lohsandt (2005), Raphael

(2006) surveyed purely online degree-seeking students enrolled in six different

traditional four-year brick-and-mortar institutions that offered online programs. Of the

272 respondents in Raphael's study the majority (N=199) were graduate students.

Raphael developed an instrument to examine the need for support services for online

students and to what extent those needs were being met. The survey instrument listed

49 student services and for each service asked respondents to rate their perceived need

for and satisfaction with each of the listed services on a five-point Likert-type scale. The

49 services were grouped by Raphael into 10 larger categories including:

- distance learning- general;

- pre-admission information, administrative, and academic program information;

- orientation services;

- academic advising;

- career services;

- services for students with disabilities;

- personal counseling;

- academic support services;

- opportunities for community; and

- bookstore services.

Of the 49 services surveyed, the top five student service needs included three from the

bookstore services category (offering a comprehensive online bookstore, online

payment and order tracking, and clearly described shipping methods) and two from the

academic advising category including the highest-ranked item (clear, complete, and

timely information regarding curriculum requirements) and the fourth rated response

(access to individual academic advising). The lowest five areas included three from the

personal counseling category and one each from the orientation services category and

opportunities for community category. Notably, in all but one area, paired *t*-tests

demonstrated a statistically significant gap between reported student service needs and

the availability of those services. The one item in which no significant difference was

found was for "Orientation as a required, for-credit course."

The multi-institutional nature of both Lohsandt's (2005) and Raphael's (2006) studies significantly enhanced the power of their studies. However, the low number of students responding to Raphael's survey (n=272) and the large proportion of graduate students in her sample (n=199) may have skewed her data to some degree as she did not do separate analyses of undergraduate and graduate students. Lohsandt had a larger number of participants (n=1687), however, the relatively low 11.7% response rate to her survey calls into question how representational her sample was.

Explicitly citing the work of Raphael (2006), Axelson (2007) used Raphael as both the impetus and guide for her research with undergraduate students enrolled in online courses at the University of Wyoming in Laramie. Using survey methodology, Axelson asked students about their use of, and the importance of, student services then currently offered and the students' interest in, and importance of, several proposed services not then offered. Axelson sent the survey to 1,154 potential respondents and received 526 responses for a 45% response rate.

Axelson (2007) noted that, at the time the research was conducted, the University of Wyoming offered very limited services to online students and focused on the highly transactional services (Dare et al., 2005) that form the minimum services required to offer online courses (e.g., registration, email, library, financial aid). One section of Axelson's survey listed proposed student services and then asked respondents to select whether they would use the service, would not use the service, or did not know if they would use the service. Of the list of services not then offered to

online students, academic advising was identified as the service most likely to be used

(71%) than any other. The service on the list with the next highest number of students

(38%) indicating they would likely use it was career advising. The remainder of the

services proposed such as, clubs and organizations, personal counseling, and student

government had scores at 21% or less indicating little interest by online students for

those services. Axelson's findings were consistent with Lohsandt's (2005) findings that

online students reported being less interested in services normally identified with on-

campus student enrollment. As another single institution study, the generalizability of

the study on its own may be somewhat limited but the correspondence between the

studies is noteworthy. The excellent return rate of the survey of 45% does indicate that

the findings should be representative of the population surveyed.

Summary of Research in Online Student Services

Although the provision of student services is seen as an essential element to

quality online learning, there is still relatively little research on what student services

should be offered to online learners and how best to offer them (Cain & Lockee, 2002;

Moisey & Hughes, 2008; Raphael, 2006; Rimbau-Gilabert, Martinez-Arguelles, & Ruiz-

Dotras, 2010). While some accrediting agencies and others have attempted to define

what student services should be available to online learners, there is still significant

debate over what constitutes adequate access to student services (Dare et al., 2005;

Shea, 2005). To fill that gap, some researchers (Axelson, 2007; Dare et al., 2005;

Lohsandt, 2005; Raphael, 2006) have conducted empirical research into what student

services online learners thought important and their satisfaction with or willingness to use those and other student services.

While much of the research into student services for online learners is limited by its single-institution nature (Axelson, 2007; Dare et al., 2005; LaPadula, 2003) and/or small size or low response rate (Lohsandt, 2005; Raphael, 2006) the findings themselves appear to be in accord with one another. While both LaPadula and Dare et al. interpreted their findings as showing that there was significant interest in student services such as, fitness centers, personal counseling, and student activities, the actual percentages of online learners expressing interest was well less than half of those surveyed. It appears that these are not the services most desired by online learners. Dare et al. did suggest that this lack of interest may be due to online learners not being fully aware of the opportunities available to them. While that may be, the survey data still appeared to suggest that these may not be priority services in which institutions need to invest.

Another consistent finding that emerges from the extant research is that online learners were most interested in services considered essential for success such as registration, academic advising, and technical services. In particular, Lohsandt (2005) and Raphael (2006) found that online learners rated academic advising as one of the most important services offered by their institutions. Axelson (2007) noted that the University of Wyoming did not offer academic advising to online learners and found in her research that 71% of the students surveyed indicated they would use the service if

offered. Given the desire of online learners for academic advising, examining academic

advising for online learners is appropriate and necessary.

Academic Advising

Academic advising, in one form or another, has existed in American higher

education since the colonial times (Bush, 1969; Frost, 2000). However, it was not until

the latter part of the twentieth century that advising became an activity that was both

"defined and examined" (Frost, 2000, p. 10). The changes that drove academic advising

into a defined and examined activity were related to the broadening of curriculum that

occurred in the late nineteenth and early twentieth century combined with the growth

in both the size and diversity of the student population in the late twentieth century

(Frost, 2000; Habley, 2000). It was during this time that a loosely defined group of

individuals who worked with learners to chart a course through their academic work

began to coalesce into a recognizable profession with an expanded framework for

advising that went beyond the prescription of courses to students.

Prescriptive and developmental advising. As academic advising became a more

examined activity, several approaches in how best to advise learners have taken shape.

The first, and arguably the most influential, was the developmental advising model first

formally articulated by Crookston (1972) and O'Banion (1972). Crookston wrote that the

first basic assumption that undergirded developmental advising was that

> higher learning is to be viewed as an opportunity in which the developing person
>
> may plan to achieve a self-fulfilling life; that the perspective of work and

professional training more properly should be placed within the development of

a life plan instead of the current tendency to prepare one's self for a profession

and then build one's life around it (p. 5).

The plan for developing a self-fulfilling life was one that should be mutually created by

an adviser and a student in a collaborative relationship where both parties learn from

each other. Learning output was a shared responsibility in developmental advising and

control and responsibility are negotiated between the student and the adviser. This

relationship between the student and the adviser helped form the basis of learning

community where the learner was more than a "passive receptacle for knowledge"

(Crookston, 1972, p. 5) but an active contributor and decision-maker regarding their

own education. In these types of relationships, the adviser viewed the student as

capable of self-direction and encouraged self-direction to a high degree.

In a similar vein, O'Banion (1972) began his essay by stating that the purpose of

academic advising is to help a student "in the development of his total potential" (p. 10)

through selecting an appropriate program of study. To this end, O'Banion articulated

five steps in sequence for individual and institutional decision-making and program

planning. The five steps in order are (a) exploration of life goals; (b) exploration of

vocational goals; (c) program choice; (d) course choice; and (e) scheduling courses.

O'Banion argued that these steps formed a logical sequence for the development of the

whole person. Using these steps, academic advising would take place in a team-oriented

format with each member of the team (student, counselor, and instructors) contributing

according to his or her competencies and abilities. This team approach shared

similarities with Crookston's (1972) suggestion of collaborative relationships between

advisers and students.

For Crookston (1972), developmental advising was the antithesis to what he

described as prescriptive advising. A prescriptive advising relationship was one based on

the authority of the adviser to prescribe coursework as well as a program of study.

Prescriptive, authoritarian advising was not conducive to the developmental ideals of

collaboration and shared responsibility. While there may be some cases where simple

advice may suffice in working with students, Crookston warned that a problem that is

presented may be simply "symptomatic" (p. 6) and thus the response provided in the

form of advice may prove unhelpful. Lowenstein (2005) described the prescriptive

advising approach as "bookkeeping" (p. 66) as the adviser simply provided information

and then tracked students' compliance.

Learning-centered advising. In the time since the publication of Crookston's

(1972) and O'Banion's (1972) articles, the developmental advising model has become

the dominant paradigm in academic advising (Frost, 1991; Hemwall & Trachte, 1999,

2005, Lowenstein, 1999, 2005). However, Hemwall and Trachte (1999, 2005) as well as

Lowenstein (1999, 2005) among others, suggest that the developmental model should

not be the dominant paradigm. Hemwall and Trachte (1999, 2005) argued that the focus

on development led to a de-emphasis on academic learning. Furthermore, the emphasis

on development also resulted in student development being given co-equal but

separate status in higher education alongside intellectual learning. Hemwall and Trachte

continued by suggesting that this separation and focus on the holistic development of

the student de-emphasized the centrality of the academic curriculum thereby alienating

faculty members whose focus was on the academic mission as well as their expertise in

their chosen field. To rectify this imbalance, Hemwall and Trachte suggested that

developmental concerns be secondary to the academic curriculum and be considered

only so far as it either enhances or impedes learning.

Lowenstein (1999, 2005), in accord with Hemwall and Trachte (1999, 2005), also

argued that developmental advising is an inferior form of advising when compared to

academically-centered (1999) or learning-centered (2005) advising. Furthermore,

Lowenstein argued that developmental advising did not present a "compelling view of

the goal of advising" (p. 67). He further suggested that Crookston's (1972) definition of

developmental advising was set up more in "juxtaposition" (p. 1) to prescriptive advising

rather than as a compelling model on its own. Lowenstein also argued that it is

inappropriate to compare prescriptive advising to developmental advising as they

described two separate constructs. Prescriptive advising described a style of advising as

where developmental advising described the content of advising. The opposite of

prescriptive advising is not developmental advising, rather it is collaborative advising

(Lowenstein, 1999).

What should be compared, Lowenstein (1999, 2005) argued, are the

developmental and learning-centered theories regarding the content of advising.

Lowenstein (1999) described the differences stating, "In simplest terms, developmental advising focuses on the student's personal growth and development while academically centered advising centers on the student's academic learning" (para. 10). By replacing developmental advising with learning-centered advising, advisers would return the liberal arts to the "center of higher education" (para. 14). In addition, academically-centered advising is unique to college. According to Lowenstein (2005), development can happen in any counseling environment but advising should be about something that cannot be obtained elsewhere.

Smith and Allen's academic advising functions. While they acknowledged the prior literature that continued to focus on a binary approach to academic advising, Smith and Allen (2006) suggested that "a dichotomized approach is problematic" (p. 56). When looking at the content of prescriptive, developmental, and learning-centered advising, there is nothing within the *content* of these three approaches that is inconsistent with the others though the *style* of each approach to advising may differ. In a review of advising literature beginning with Crookston and O'Banion in 1972, Smith and Allen identified 12 academic advising functions that constitute quality advising. These 12 functions operationalized five constructs or domains Smith and Allen identified in the literature as being critical to quality academic advising:

- *Integration* of the student's curricular and co-curricular experiences into a meaningful whole that connects academic, career, and life goals;

- *Referral* to campus resources that address academic and non-academic

  problems;

- *Information* about how things work at the university and about degree

  requirements

- *Individuation* or taking into account the student's skills, abilities, and interests as

  well as knowing the student as an individual and;

- *Shared responsibility*, or helping students develop planning, problem-solving,

  and decision-making skills so that they come to assume greater responsibility for

  their own education.

By focusing on the functions that Smith and Allen asserted constitute quality advising,

an adviser would address the content of prescriptive, developmental, and academically-

centered advising. The 12 functions and their corresponding variable names are listed in

Table 1.

Table 1

Academic Advising Domains and Functions with Abbreviations of Function Names

Variable Names and Abbreviations	Academic Advising Functions and Domains
	Functions Within the Integration Domain
Overall connect (oc)	Advising that helps students connect their academic, career, and life goals.
Major connect (mc)	Advising that helps students choose among courses in the major that connects their academic, career, and life goals.
Gen ed connect (gec)	Advising that assists students with choosing among the various general education options (e.g., choice of capstone, cluster, courses within cluster) that connect their academic, career, and life goals.
Degree connect (dc)	Advising that assists students with deciding what kind of degree to pursue (bachelor of science, bachelor of arts, bachelor of music) to connect their academic, career, and life goals
Out-of-class connect (out)	Advising that assists students with choosing out-of-class activities (e.g., part-time employment, internships or practicum, participation in clubs or organizations) that connect their academic career or life goals
	Functions Within the Referral Domain
Referral academic (ra)	When students need it, referral to campus resources that address academic problems (e.g., math or science tutoring, writing, disability accommodations, testing anxiety)
Referral nonacademic (rn)	When students need it, referral to campus resources that address nonacademic problems (e.g., child care, financial, physical and mental health
	Functions Within the Information Domain
How things work (how)	Assisting students with understanding how things work at this university (understanding time lines, policies, and procedures with regard to registration, financial aid, grading, graduation, petitions, and appeals, etc.)
Accurate information (ai)	Ability to give students accurate information about degree requirements
	Functions Within the Individuation Domain
Skills abilities interests (sai)	Taking into account students' skills, abilities, and interests in helping them choose courses
Know as individual (kai)	Knowing the student as an individual
	Function Within the Shared Responsibility Domain
Shared responsibility (sr)	Encouraging students to assume responsibility for their education by helping them develop planning, problem-solving, and decision-making skills

Adapted from "Essential Functions of Academic Advising: What Students Want and Get," by C. L. Smith and J. M. Allen, 2006, *NACADA Journal, 26(1),* p. 59.

Based upon their review of the advising literature, Smith and Allen (2006) developed two parallel survey instruments, the *Inventory of Academic Advising Functions- Student Version* and the *Inventory of Academic Advising Functions- Faculty Version.* The inventories asked students and faculty about their attitudes about, and experiences with, academic advising. The student version of the survey instrument was designed to gauge student ratings on the importance of and their satisfaction with each of the 12 advising functions identified by Smith and Allen. In addition, Smith and Allen (2014) included measures of learning outcomes one should expect as a result of a quality academic advising curriculum. The faculty version of the survey instrument was designed for faculty to rate the importance of each function, their level of satisfaction with the advising they provide for each function, and their level of agreement that providing each advising function was part of their responsibility.

Using the student version of their survey, Smith and Allen (2006) surveyed undergraduate students at a doctoral research-intensive urban university. The 2,193 respondents reported that they placed all 12 functions at the high end (scale point 4 or over on a 6-point scale) of the importance scale. While students rated all functions as highly important, *accurate information* was rated as most important with a mean score of 5.64 on a 6-point scale and *how things work* was rated as the third most important with a mean score of 4.99 on a six-point scale. Clearly students valued the receipt of accurate information above all else and this function can be viewed as an element of prescriptive advising. However, even the lowest ranked function, *out-of-class connect,* a

function that is more connected to developmental advising than accurate information,

received a mean score of 4.21 on a six-point scale suggesting that "effective academic

advising has both developmental and prescriptive elements" (p. 62).

In another study comparing faculty response to the faculty version of the survey

with the student response to the student version of the survey, Allen and Smith (2008a)

found that both students and faculty rated all twelve functions on the important end of

the scale (above scale point 4 on a 6 point scale). In addition, both students and faculty

rated the *accurate information* function as the most important function. Faculty rated

all functions in the Integration domain and functions in the Referral domain as more

important than did students. Allen and Smith used within-subjects ANOVAs to

determine that both faculty and students discriminated among the importance of the

advising functions (i.e., regard some functions as more important than others). The

relative importance of the functions was similar for students and faculty except for the

referral functions which faculty regarded as relatively more important than did students

and the *know as individual* function which students rated as relatively more important

than did faculty. When comparing student satisfaction on the advising they received

with faculty satisfaction with the advising they provided, Allen and Smith found students

were much less satisfied with what they were receiving than faculty were with their

advising they provided on those twelve functions. Finally, when comparing student

importance ratings to the level of responsibility that faculty assumed for the twelve

advising functions, Allen and Smith found that of the four functions students rated as

most important (*accurate information, overall connect, major connect, how things work*)

faculty also felt most responsible for those same functions except for *how things work*

which faculty rated as among the functions for which they felt least responsible. The

other major difference between student satisfaction ratings and faculty responsibility

ratings is on *referral academic.* Faculty rated that function as one they felt most

responsible for while students rated it as one of the least important functions. Another

important finding from this study was confirmation of the relative importance ratings of

academic advising functions as rated by students in Smith and Allen's 2006 study.

However, while the 2006 study simply arranged the functions in order of the students'

mean ratings, Allen and Smith's (2008b) within-subjects ANOVA analysis also provided

evidence that students truly discriminated in the difference among the advising

functions. Not only did students rate the relative importance of the functions but

students also meaningfully discriminated among the 12 functions.

More recently, Smith and Allen (2014) identified eight learning outcomes that

students should derive from quality advising. The researchers reported that over 22,000

students from two community colleges and seven universities participated in an

administration of the *Inventory of Academic Advising- Student Version* in 2010 and 2011.

In this iteration of the survey, students were asked to rate (using a six-point Likert-type

scale where 1 = strongly disagree and 6 = strongly agree) their agreement with

statements related to the eight advising learning outcomes. Looking to empirically

connect participation in academic advising to student learning, Smith and Allen

hypothesized that students with more contact with academic advising would report higher levels of learning than those with fewer or no contacts with academic advising or advisers. To accomplish this, Smith and Allen divided the 21,867 students into three groups: not advised, occasionally advised, and frequently advised. They also divided students based on sources of advising information: advisers, advising tools (e.g., web sites, advising guide, catalog), and informal social network (friends, classmates, family).

Smith and Allen (2014) reported that on all eight learning outcomes students who reported higher levels of contact with their advisers also reported higher scores on the learning outcome measures. In addition, students who received their information primarily from an adviser reported higher scores on the learning outcomes measures than those in the other two groups. Those who used advising tools scored higher on all but two outcomes than those who used informal networks. The informal network group reported higher scores on an item measuring how students value adviser-advisee relationships and an item measuring support for mandatory advising. These results were obtained even when controlling for other variables that impact student learning including: institution, size of student body, GPA, and being newly enrolled at their institutions. In addition, Smith and Allen conceptually linked these learning outcomes to the literature on student success and retention.

Table 2

Advising Learning Outcomes and Corresponding Variable Names

Variable Name	Advising Learning Outcome
Knows Requirements	University students: I know what requirements (e.g., major, general education, other university requirements) I must fulfill in order to earn my degree (4-year students) Community college students: I know what requirements (e.g., prerequisites, general education, transfer requirements) I must fulfill at *name of institution* in order to meet my educational goals
Knows Resources	When I have a problem, I know where at *name of institution* I can go to get help
Understands How Things Work	I understand how things work at *name of institution* (timelines, policies, and procedures with regard to registration, financial aid, grading, graduation, petition and appeals, etc.)
Understands Connections	I understand how my academic choices at *name of institution* connect to my career and life goals
Has Educational Plan	I have a plan to achieve my educational goals
Has Significant Relationship	I have had at least one relationship with a faculty or staff member at *name of institution* that has had a significant and positive influence on me
Values Advisor-Advisee Relationship	It is important to develop an advisor-advisee relationship with someone on campus
Supports Mandatory Advising	There should be mandatory academic advising for students

Adapted from "Does Contact with Advisors Predict Judgements and Attitudes Consistent with Student Success? A Multi-Institutional Study," by C. L. Smith and J. M. Allen, 2014, p. 53.

Academic Advising and Retention

The connection among the eight learning outcomes identified by Smith and Allen (2014) and factors related to student success and retention is consistent with previous research on the connections between academic advising and student success and retention. Pascarella and Terenzini (2005) concluded that "Research consistently indicates that academic advising can play a role in students' decisions to persist and in their chances of graduating" (p. 404). However, it is unclear whether academic advising played a direct role in retaining learners or an indirect role by influencing other factors directly related to retention such as better academic performance, relationships with faculty, staff or administrators, or intent to persist.

Metzner (1989) conducted a study at a Midwest public university to determine what impact high quality advising as perceived by a student might have on retention. Metzner surveyed 1,033 freshmen students who did not live in the residence halls and were not international students. During fall semester 1982, surveys were distributed to all English Composition courses to be completed by students attending those classes. Metzner achieved an 80% return rate on the surveys; the missing 20% were students absent from class on the day the survey was distributed. Among other survey items, students were asked to rate the quality of the academic advising they received on a five-point Likert-type scale where 1 = *Very Low* and 5 = *Very High*. Metzner then categorized responses into "Poor Advising" (ratings of 1 ,2, or 3) or "Good Advising" (ratings of 4 or 5) in addition to a group that had not received advising at all.

Using a multiple regression analysis, Metzner (1989) found that the 14 variables she examined accounted for 30% of the variance in dropout rates. However, Metzner found that neither good advising nor poor advising had a significant direct effect on whether students dropped out. Metzner did find that good advising had a significant indirect effect on dropout through several intervening variables including satisfaction, utility, GPA, and intent to leave. Metzner reported that "The rate of attrition for the good advising group was 25% less than that of the poor advising group and 40% less than the withdrawal rate of the no advising group" (p. 433). Interestingly, Metzner concluded that even poor advising was better than no advising at all when considering retention.

Seidman (1991) took 278 new students entering a community college and randomly divided them into treatment and control groups. The control group received the standard orientation process. The treatment group received pre- and post-admissions advising including meetings with advisers two more times during the first semester to discuss issues regarding adjustment to college, campus and academic involvement, and course scheduling. Seidman found that students in the treatment group were retained at a rate 20% greater than the control group.

Peterson, Wagner, and Lamb (2001) approached the advising and retention issue differently by surveying non-returning students and their perceptions of the university. Peterson et al. posited that retention was connected to a construct that reflected the core benefits of attending the institution they entitled *The Offer. The Offer* was

composed of ratings of the university's learning environment, recreational

opportunities, and program of majors. They also composited three other constructs they

titled *Advising, Extracurriculars,* and *Social Support.* Using structural equation modeling,

they attempted to determine the relationships between the four constructs and

particularly, the effect the three other constructs had on *The Offer.* The only construct

with a statistically significant result on *The Offer* was *Advising* with a correlation of .43

meaning with every unit increase/decrease in the *Advising* construct, a one-unit

increase/decrease would occur in the factor for *The Offer.* If *The Offer* were connected

to retention as the authors posited, then focusing efforts on advising would have a

positive effect on the retention of students at that institution. Notably, the authors

pointed out that it was unclear if advising was a subset of academic integration, social

integration, or if it constituted its own construct. Additionally, the connection between

The Offer and retention was a supposition and would need to be researched

independently to determine its utility as a factor directly impacting retention.

Vianden and Barlow (2015) approached the relationship between academic

advising and retention using a different mediating variable of student loyalty. In their

study, they posited that a strong, positive relationship between a student and an

academic adviser helped to "tie students to the university more strongly than any other

educator on campus" (p. 15). In their study, Vianden and Barlow surveyed a sample of

7,500 undergraduates at three institutions. They had a 16% response rate totaling 1,207

responses. In their analysis, the authors found that student perceptions of quality

academic advising positively influenced their commitment and bond with their

institution. In addition, quality academic advising also may have influenced students'

commitment to the institution, not just through graduation, but beyond graduation into

longer term alumni relationships with their alma mater.

In a study of the impact on the advisement and retention of online

undergraduate students, Clay, Roland, and Packard (2008) found that intensifying the

level of advising and technology orientation prior to class registration and also

increasing the level of redundant communication to beginning online students improved

their retention. Clay et al.'s study focused specifically on online students enrolled in the

University of West Georgia's eCore program that allowed online learners to complete

their first two years of general education credits completely online through a

partnership with the University of Georgia. The researchers noted that retention rates

for students enrolled in eCore classes were 18-20% lower than the rates of students in

on-campus courses and that the withdrawal rates of eCore students were more than

50% higher than the rates of students in on-campus courses. In 2007, the researchers

and associates contacted students who had enrolled and then later withdrawn from

eCore courses to determine what led them to withdraw. While several factors were

found, one consistent factor noted by the researchers was the online students' level of

unpreparedness for online learning. The respondents told researchers that they were

unprepared for the amount and nature of the work they would need to complete. Many

respondents also expressed surprise that they would never see their instructors and

many were under the impression that the online course would be less difficult than an

on-campus course.

As a result of the survey, the University of West Georgia implemented a gated

advisement system as well as initiated a system of redundant communications (Clay et

al., 2008). The gated advisement system required students who wished to enroll in

English Composition or College Algebra eCore classes to first meet with their regular

academic adviser, to meet with a specialized eCore adviser, to complete an online

orientation to the eCore program, and then take a quiz testing their understanding of

the nature of online coursework. If the student marked any answer on the quiz

incorrectly, an eCore adviser would contact him or her to discuss the incorrect answer

or answers. Only at that time would the student be allowed to register for the eCore

courses.

Concurrent with the gated advisement process, the University of West Georgia

divided communications regarding the program into weekly segments focusing on single

topic to send to students enrolled in English Composition or College Algebra eCore

classes (Clay et al., 2008). Additionally, a few days prior to the beginning of the

semester, advisers called each student to make personal contact, answer questions the

student might have had, to remind the student to log in to the learning management

system daily, and to let the student know how to get help. Finally, eCore administrators

created a Facebook portal for eCore students as an additional point of contact for

students.

In an examination of retention numbers for the eCore program following implementation of the gated advisement and redundant communication program, Clay et al. (2008) found that retention for the eCore program increased from 75% in 2006 to 82% in 2007. The researchers also found that in English Composition I, retention improved from 71% to 95% during the same time period and retention rates in English Composition II increased from 62% to 91%. In College Algebra, retention improved from 68% in 2006 to 82% in 2007. While the personal connection to a faculty or staff member was an important element in the gated advisement and redundant communication program initiated by the eCore program, the primary focus was providing accurate information about how the program worked and the expectations the institution had of the learners. By providing the advising function that learners rate very highly (Smith & Allen, 2006), the eCore program at the University of West Georgia was able to make demonstrable improvements in their retention rates for online learners.

Academic Advising for Online Learners

Whether prescriptive, developmental, or learning-centered, advising matters for learners. As discussed previously, academic advising matters very much for most online learners and has the potential to improve retention either directly or indirectly. However, very little empirical research exists on the advising experiences of online or distance learners (Brindley, 2014; Curry, 2003, 2013; Curry et al., 1998; West, 2011). While a great deal of literature exists on pedagogical approaches to online learning, online teaching is not the same as advising online students even when using the same or

similar technologies (Steele, 2005). In reviewing the literature on academic advising for

online learners over the past decade, the primary thrust of the literature has focused on

considering academic advising amongst a variety of factors that comprise student

services broadly and their impact on retention or the use of technology in advising both

online and on-campus learners. While little peer-reviewed literature on the academic

advising experiences of online learners was found post-2014, there were some limited

examples of dissertation research examining this topic (e.g., Brown, 2017; Hale, 2016;

Jackson-Boothby, 2017; Stermer, 2018).

Eight empirical studies of advising practices or adviser characteristics for

undergraduate online or distance learners were located. Two of the studies (Beitz, 1987;

Trent, 1997) were eliminated for review as they defined distance education as any

classes offered away from the home campus. In both cases, the classes were still offered

face-to-face with an instructor but at a satellite location. The remaining six were

reviewed in chronological order beginning with the oldest publication date.

Workman and Stenard (1996) conducted interviews of students, staff, and

faculty working at regional centers associated with Eastern Oregon State College's

(EOSC) Division of Extended Studies and Regional Services. At the time, EOSC offered

distance education through video teleconferencing at six regional centers, independent

study through recorded videotapes of classes, and weekend colleges. Each regional

center was run by a regional adviser who worked with students both as a representative

of EOSC in most administrative matters and also as an academic adviser for students in

those geographical areas.

In interviews of 60 students as well as regional center directors, clerical staff in

the division, and other student affairs staff, Workman and Stenard (1996) identified five

needs of distance education students:

- Clarity of programs, policies, and procedures to ensure consistency for student

  planning;

- Building of self-esteem;

- Identification with the institution;

- Development of interpersonal relationships with peers, faculty, and staff and;

- Accessibility to learning support services including library, bookstore, computers,

  learning support services (tutoring, testing, counseling, etc.).

Workman and Stenard (1996) also reported that the most effective way of

developing a sense of mattering for the students in the study was face-to-face contact

with their regional center director. They write, "The most consistent positive feedback

received from the students was about their gratitude to the Center Directors. The

Center Directors are the cheerleaders, shoulders to cry on, and dependable contacts for

the students" ("Building Self-Esteem," para. 4).

Where students expressed the greatest levels of concern and frustration was

with their perception of a lack of clarity in understanding policies and procedures

(Workman & Stenard, 1996). Often this frustration was driven by frequent changes in

policies and procedures by the institution. Workman and Stenard noted that changes

did need to occur but suggested that the impact of changes on distance students be

considered more expressly than had been done previously. In addition, regional center

staff needed to receive training regarding changes on a regular and continual basis to

ensure that they had access to the correct information at all times.

The most compelling part of Workman and Stenard's (1996) research is their use

of student participants. Their research was one of only two research studies on

academic advising for distance or online students that included student perspectives.

However, there are two primary shortcomings to this study. First, the study is now over

20 years old and the types of distance education EOSC offered at the time are not the

primary methods of delivering online education presently. In addition, the researchers

failed to identify how the students who participated took their coursework. Students

taking telecourses might respond differently than a student taking independent study

courses. The same could be said for a student taking a face-to-face weekend college.

Without differentiation, it is impossible to determine what the different needs of each

of these different student types may be.

In dissertation research on community college students enrolled in telecourses,

Paneitz (1997) surveyed institutions to determine how student services were being

offered and secondly, the utilization and satisfaction with those services. Paneitz first

identified two-year institutions that offered associate's degrees at a distance. Then she

selected a purposeful sample of ten institutions whose provision of student services

covered a range of technological services from no services at a distance to those who

provided services through relatively high levels of technology. Each of the ten

institutions was sent forty cover letters and questionnaires to be randomly distributed

to distance learners. One-hundred and eighty-three surveys of the 400 were returned

for a response rate of 46%.

One remarkable finding by Paneitz (1997) was the high use of advising services

by the community college students. Fully 83% of distance students used advisers for

assistance scheduling classes, 80% for degree planning, and 76% for referral to remedial

or study skills assistance. She found that academic advising was the most utilized service

for distance students. She also found that technology did not play a significant role in

satisfaction with or utilization of advising services. Student at schools with no

technology (students come to campus for advising) and those with high technology

(student could call, fax, email, or use a computer message board for assistance) were

equally satisfied. Paneitz recommended that institutions focus efforts and resources on

providing academic advising as well as other services in a consistent and efficient

fashion rather than expending resources on more technology.

There are significant limitations to Paneitz' (1997) study that limit its usefulness.

First, the age of the study is problematic given the radical changes in how distance

education services are provisioned currently using online/Internet technologies. The

participating institutions in Paneitz' study used telecourses with students watching class

sessions on public television stations. Another limiting factor is the short distance from

campus these students lived. Paneitz' conclusion that there was no difference between students who attended institutions with no technology and those who attended institutions with high levels of technology reflect this fact. Students who live in close proximity even though they are taking distance courses still have relatively easy access to face-to-face advising. It may be that the lack of difference in reported satisfaction regarding the issue of technology existed because there was no significant disadvantage to not having access to technology as face-to-face advising was readily available.

A study conducted by Curry et al. (1998) was the first that looked specifically at academic advising practices in four-year institutions offering electronic degree options. Curry et al. conducted a national survey of baccalaureate-granting institutions offering at least one degree at a distance that used primarily electronic means of delivery. At the time of the study, only 89 institutions in the United States met those criteria. Each of those institutions was sent the *Academic Advising in Distance Education Survey* for an administrator to complete. The survey was based on the American College Testing's Fourth National Survey of Academic Advising with the questions adapted to fit the purpose and several additional questions added regarding issues specific to distance education.

At the time of the study, the top three methods of delivering curriculum were (a) videoconferencing (61%); (b) videocassette (58%); and asynchronous computer conferencing (43%) (Curry et al., 1998). Percentages do not equal 100% as some institutions used multiple methods of curriculum delivery. The top three methods of

student-adviser communication were (a) telephone conversations in real-time; (b) in-person and; (c) written correspondence by mail. In all cases, it was more prevalent to base all services on the main campus of an institution rather than have faculty or administrators based closer to students. Additionally, 89% of institutions required advising contact for students. That academic advising was seen as being important by institutions with distance education was reinforced by the large proportion of institutions that mandated advising.

Curry et al. (1998) concluded with four primary recommendations. First, advisers should work to develop individual and personalized relationships with their advisees. As the adviser is often the only administrative contact a distance student may have with the institution after admission, this relationship is very important. A good relationship also helped to create connection with the institution even at a distance. Second, the adviser should receive an advising handbook with essential policies, rules, and guidelines. This helps to avoid the issue of unclear or incorrect information noted by Workman and Stenard (1996). Third, advising programs and individual academic advisers should be evaluated and services should be improved based on evaluation results. Finally, future research should include survey research of students themselves instead of just institutions. The survey should ask students what academic advising services they want and how satisfied they are with the services they currently receive.

The research conducted by Curry et al. (1998) is among the most comprehensive research studies conducted on advising practices in distance education. Its national

scope and high response rate on the survey greatly increase its usefulness. However, the

research is very out of date and no replication studies have been conducted. For

example, while statistics are not available for 1997, the year the survey was conducted

by Curry et al., the growth rate from 2002 to 2016 in online enrollments have been in

the double digits each year save one (Allen & Seaman, 2017). The size of the population

has grown significantly since the study was conducted and technology has evolved

tremendously since then. For example, Curry et al. reported that no more than 34% of

institutions used email as a regular form of communication with students. By 2002, 97%

of academic advisers reported using email on a regular basis (Dunn, 2005).

More recently, Dunn (2005) conducted a qualitative research study with

counseling and advising center directors who worked at institutions across Canada that

offered a significant number of programs through distance options. Of the 53

institutions contacted, 31 administrators from 24 institutions agreed to take part in the

study. In some cases, the same person directed both counseling and advising services on

the campus and on other campuses those services were separated. The data were

collected in one of two ways. Either the participant responded to a survey with five

open-ended questions or, if the participant preferred, a researcher contacted the

participant and conducted a structured interview which was then later transcribed for

analysis. Once the data were collected, Dunn used thematic analysis to identify themes

related to participants' experience in providing services to distance students.

Dunn (2005) identified six themes from her qualitative analysis. These themes were:

- Technological and practical challenges- Comfort with technology, balancing access with quality, establishing contact with students;

- Institutional challenges- Lack of resources, challenges with partnerships, timely services;

- Professional challenges- risk management concerns;

- Attempted remedies- Alternative service modalities, streamlining services, more static information on websites;

- Distance learner needs- Tailoring services, expectations of instant service, providing unique services;

- Delivery-mode approximation- Trying to find best practices and an effective delivery service model;

The results led Dunn (2005) to suggest that a "paradigm shift in the foundational thinking about student service provision" (pp. 52-53) was occurring. Dunn further suggested that the paradigm shift may be occurring due to increased expectations of accessibility to student services by students along with increasingly rapid responses from institutional personnel as well as an expectation by students that the delivery of those student services be as nontraditional as the other educational options they were receiving. Dunn concluded by arguing that the provisioning of student services must be

planned with a great deal of forethought rather than simply treating online students as though they were traditional students.

Although Dunn's (2005) study included useful findings that echoed findings from other research into online and distance learner needs, the lack of differentiation between counseling and advising makes the results of the study problematic in generalizing to a purely advising relationship. Some of the concerns about privacy and medical records involved with counseling do not apply to academic advising. In addition, the relatively small sample does bring up additional concerns about representation.

Morris and Miller (2007) conducted a study looking specifically at advising practices in online programs offered by private undergraduate institutions. Using the Council on the Advancement of Standards (CAS) learning and development objectives for academic advising as a basis for a survey, Morris and Miller appended the phrase, "Do your online advisers" to nine of the advising objectives being surveyed. They then sent the survey out to 150 private undergraduate institutions. Sixty of the institutions responded resulting in a 40% response rate. Of those sixty responses to the survey, eleven institutions indicated that they offered undergraduate degree programs online.

Of the eleven responding institutions, five utilized professional advisers and six utilized faculty as advisers (Morris & Miller, 2007). All the respondent institutions agreed that their advisers encouraged meaningful relationships among students and staff or faculty, 67% promoted diversity, and 58% encouraged students to set personal and educational goals. The lowest ranked objectives were assisting advisees to be better

communicators (66.5% of respondent institutions said rarely or never), promoting

healthy behaviors (75% said rarely or never), and assisting in developing satisfying and

productive lifestyles (67% said rarely or never).

In a discussion of the survey findings, Morris and Miller (2007) suggested the

need for intentionality in developing advising programs for online students. Morris and

Miller concluded that for most online programs, academic advising is used more as an

enrollment management tool rather than a developmental activity. The focus on

advising as an enrollment management tool undermined the developmental nature of

the advising relationship as well as stunted the conversation between advisers and

students regarding connecting knowledge across the curriculum as well as seeing the

importance of connecting the co-curriculum to the curriculum. Morris and Miller

concluded that with students at a distance, advisers and administrators will need to

develop intentional plans to connect online students to the institution and to each other

rather than depending on happenstance.

There are several very important limitations to the study by Miller and Morris

(2007). The exceptionally small sample size of eleven schools for a quantitative study

calls into serious question how representative the study is as well as its generalizability.

In addition, while intentional, targeting only private institutions limits the

generalizability of the study to a more diverse population of institutional types. Finally,

the selection of CAS objectives was strongly skewed towards developmental outcomes.

None of the objectives asked about in the survey were related to academic programs or

to providing accurate information to students. For a study that was intended to

determine what practices were used by academic advisers at private institutions, the

survey was very limited in the range of practices it questioned.

More recently, Gravel (2012) conducted research on the perceptions and

essential elements of adviser-advisee relationships for online students. Utilizing

Crookston's (1972) framework of prescriptive versus developmental advising, Gravel

undertook a mixed-methods study utilizing the Winston and Sandor Academic Advising

Inventory followed by participant interviews and review of artifacts, primarily messages

sent to students from their adviser and email exchanges between the students and their

adviser. Gravel sent the survey out to 283 undergraduate students who were seeking a

degree online through a private, not-for-profit university in New England. Of the 283

invited to participate, 236 completed the survey and two were selected and agreed to

participate in a follow-up interview and review of the artifacts associated with their

relationship with their adviser.

Gravel (2012) found that, overall, online students reported a developmental

interaction style with their adviser rather than prescriptive although the result was near

the cutoff between the two styles on the continuum. When looking specifically at the

types of conversations online students were having with their adviser, online learners

reported that their conversations on personalizing education were characterized by

relatively low interactivity between the student and the adviser. When looking at the

more academically-focused topics of academic decision-making and selecting courses,

students reported higher levels of interactivity with their adviser suggesting a more collaborative effort between online students and advisers on those topics. Gravel's review of the qualitative data collected from interviews and artifact review reflected a more prescriptive relationship between advisers and online students although students reflected on the importance of individualized and personalized advising. Gravel concluded by suggesting that institutions who advise online students begin to focus more on advising that personalizes students' education and providing prompt and personalized individual academic advising for online students.

Gravel's (2012) use of online student participants and their experiences with academic advising was a key strength of this study. Since so few studies of academic advising for online or distance students that utilize student rather than institutional perspectives exist, this study helped fill in that gap in knowledge. However, the single-institution focus with a small sample size does limit the generalizability of the study. Gravel did note this limitation and suggested that future studies include larger institutions or multiple smaller institutions in order to make future findings more generalizable. Additionally, as discussed earlier, the single continuum of prescriptive to developmental advising is limiting and may not fully represent the broad and essential functions of an effective advising relationship.

Summary of Research on Academic Advising for Online or Distance Learners

The most compelling finding in the literature review on academic advising for online or distance learners is the relative paucity of research. Additionally, with the

exception of Workman and Stenard (1996), Paneitz (1997), and Gravel (2012) none of the research gathered learner perspectives on their advising experiences online or at a distance. Those missing voices represent a critical weakness in the research on advising online and distance learners. That said, some themes do emerge from the extant literature. Workman and Stenard as well as Curry et al. (1998) highlighted the importance of developing a personal relationship between the adviser and advisee. As Curry et al. pointed out, the adviser may be the only significant and ongoing relationship the online learner has with an institution. Secondly, institutions need to think broadly and intentionally about connecting online learners to the institution and how they provide student services (Dunn, 2005; Morris & Miller, 2007). Dunn went as far as suggesting that higher education may be experiencing a paradigm shift in how student services are provided. Morris and Miller discussed the need to be more intentional when planning for advising online learners and Dunn discussed the need for institutions to respond effectively to the differing needs of online learners when planning and implementing services. Without further research, it will be difficult to know how to effectively or intentionally provide advising services to online learners.

Research Gaps and Situating this Study

Most of the research into online learning has focused on how best to deliver curriculum to online learners with relatively little focus on the delivery of student services to those online learners. The extant body of literature on student services to online learners has focused on either determining what services online learners rate as

important and what services they would utilize if offered. Additionally, while academic advising has consistently been rated by online learners as important and the very limited research available has demonstrated the potential impact of advising on retention for online learners, very little is known about what online learners learn from their advising encounters, what advising functions are most important to learners, learners' satisfaction with the advising they get, and what impact quality advising has on retention for online learners. Finally, while great energy has been expended in establishing that there is no significant difference in the amount and quality learning when comparing online and on-campus learning (Russell, 2001), there is no data in extant research to determine whether or not any significant difference in how learners experience academic advising and, if a difference exists, what impact that should have on how advising is provided to online students as compared to on-campus students.

In this study, I sought to extend the existing research on academic advising functions and learning outcomes conducted by Allen and Smith (Allen & Smith, 2008b, 2008a) and Smith and Allen (2006, 2014) with attention specifically on learners enrolled in degree programs where either all or most of their coursework is taken online. The study used data collected as part of a multi-institutional study of advising conducted 2010-2011 at five public universities, two private universities, and two community colleges in Oregon. Of the institutions involved in the study, two public universities and one community college offered fully online degree programs as well as traditional on-campus programs. The data for this study was drawn specifically from those institutions.

I analyzed these data to determine what academic advising functions matter most to

online learners and how what matters most may vary from on-campus learners at those

same institutions. Additionally, these data were analyzed to better understand the

relationship between online learners' experiences with advising and the learning

outcomes associated with advising as well as factors related conceptually and

empirically related to retention for on-campus learners. Do these factors hold true for

online learners? Developing a better understanding of what online learners want and

get from academic advising fills an important gap in the current literature regarding the

understanding of academic advising for online learners and should provide much-

needed data for practitioners developing and overseeing advising programs at

institutions offering online programs.

Conclusion

Chapter 2 was a review of literature on the concepts of distance education and

online learning, student services, academic advising, and self-directed learning. The

definitional and historical overview served to position this study conceptually in the field

especially as online learning transitions from structural to transactional issues. The

review of literature on student services generally as well as the provision of student

services to online learners provided background on both the paucity of empirical

research on student services to online learners but also the importance that online

learners place on receiving academic advising. The academic advising section provided

information on developmental, prescriptive, and learning-centered advising and

recommended an approach that combined those types of advising.

In chapter 3, I outline in more detail the methodology for the study including a

review of the purpose of the study and a review of research perspective. I discuss the

selection of target populations and participant selection. Concluding chapter three are

descriptions of the procedures, survey instrument, and data analysis procedures.

Chapter 3: Methodology

Online learners, when asked, have consistently rated academic advising as a student service function that is important to them. However, researchers have spent relatively little time in understanding how online learners experience academic advising, what academic advising functions are most important to them, and ultimately what online learners learn and how their attitudes change perhaps as a result of advising. The purpose of this study was to begin to fill in some of the above-listed gaps in knowledge regarding academic advising for online learners. In this chapter, I review the research perspective, participant information and selection, instrumentation, procedures, and data analysis processes for each of the research questions.

Research Design

Data for this study came from survey responses collected in the spring of 2010 and 2011 from learners enrolled in five public universities, two private universities, and two community colleges in Oregon. All fully admitted learners at the universities and all learners enrolled in credit-bearing classes at the community colleges were invited to participate in the survey. These data were collected under the auspices of a research collaborative lead by Janine M. Allen and Cathleen L. Smith, both faculty at Portland State University. Approval of the research protocol involving human subjects was secured from the institutional review boards at each university as well as at one of the community colleges. Approval of the research protocol for the remaining community college was secured from the institutional review board at a partner university.

Participants

Participants for this study were learners enrolled in three institutions including

two public universities and a community college. The specific population were learners

enrolled in undergraduate degree programs at the two universities and learners

enrolled at the community college and intending to earn credits towards a bachelor's

degree. The condition for inclusion of intending to earn credits towards a bachelor's

degree at the community college reduced the eligible responses from learners at the

community college from 2,540 to 1,159. Of the 33,488 learners invited to participate in

the study from the study institutions, 6,368 (19.01%) completed the survey and were

eligible to be considered for the study. Table 3 provides Carnegie classifications,

enrollment, number of participants, response rates, and when the survey was

administered for each study institution. These institutions were chosen as they all offer

fully online degree programs. Of the sample, 15.1% were online learners, 84.9% were

on-campus learners, 38.3% were male, 61.7% were female, 30.1% were new students

(enrolled in their institution for the first time during the academic year the survey was

administered), 49.4% were first-generation students, 45.6% were Pell-eligible, and the

mean age was 25.7 years old (*SD* = 9.3) at the time of survey administration.

Online learners were identified differently for each institution. For Public

University 1, learners were asked where they took the majority of their classes and

those who selected "at a distance" were included in the online group. Public University

2 identified within their student information system those learners who were enrolled

in an online degree program. The community college learners were asked what at which

campus they took their courses and those who selected "online" were included in the

online learner group.

Table 3

Institutional and Demographic Information for Study Institutions

Institution	Carnegie Class	Invited to participate	Participants *n*	Response Rate	Online *n*	On-Campus *n*
Public Univ. 1	Research University (very high research activity)	18245	4003	21.9%	315	3688
Public Univ. 2	Master's (small programs)	3196	1206	37.7%	576	630
Comm. Coll.	Associate's/Public/Rural Serving, Large	12047	1159	9.6%	66	1093

There is some extant research that demonstrates differences between online

and on-campus learners. To ensure that the current study population was similar to the

online learner populations described in existing literature, I considered demographic

characteristics where prior research has found differences: gender, age, class level, new

or continuing status, and first-generation status. Based on existing research, online

learners are more likely to identify as female (Crawley, 2012), to be older (Radford,

2011) to be continuing students rather than new students (Crawley, 2012; Diaz &

Cartnal, 2006), and to be upper-division (3rd or 4th year) students (Diaz & Cartnal, 2006).

While there are not significant amounts of data on whether online learners differ from

on-campus learners regarding financial need, there is some evidence in the literature

that online learners are more likely to receive financial aid than on-campus learners

(Jaggars & Xu, 2010; Shea & Bidjerano, 2014). Additionally, there is evidence in the

literature that learners with financial need are less likely to graduate, have increased

time to graduation, and are less engaged in other academically purposeful activities

than less needy learners (Terenzini, Cabrera, & Bernal, 2001). These demographic

characteristics also were found to have associations with some of the academic advising

functions described by Smith and Allen (2006). Testing for significant differences

between online and on-campus learners was conducted using chi-square analyses

comparing the two groups across the different demographic characteristics as well as a

t-test to compare age differences. Based on the results of the chi-square analysis, I

determined that the study population of online learners was similar to the population

described in the literature with the exception of financial need. In the study sample,

online learners were significantly less likely than on-campus learners to be recipients of

Pell Grants. An independent samples t-test was run to determine if there were

differences in the ages of the two groups, online and on-campus learners. The average

age of the online learners was higher (M = 36.79, SD = 10.43) than on-campus learners

(M = 23.74, SD = 7.54), a statistically significant difference, M = 13.04, 95% CI [12.35,

13.74], t(1139.45) = 37.01, p < .001.

Table 4

Chi-square Comparison of the Demographic Characteristics of the Study Sample

Group and characteristic (total n = 6368)	Within group (# and % for online)	Within group (# and % for on-campus)	Total (# and % of group)	χ^2
Gender				
Male	276 (28.8%)	2161 (40.0%)	2437 (38.3%)	42.92 ($p < .001$)
Female	681 (71.2%)	3240 (60.0%)	3921 (61.7%)	
Financial need				
Pell grant	561 (41.4%)	2343 (56.7%)	2904 (45.6%)	76.94 ($p < .001$)
No Pell grant	396 (58.6%)	3068 (43.3%)	3464 (54.4%)	
Class Level				
Lower-division	205 (21.4%)	2530 (46.8%)	2735 (43.0%)	213.29 ($p < .001$)
Upper-division	752 (78.6%)	2879 (53.2%)	3631 (57.0%)	
First Generation Status				
First-generation, no college	287 (30.7%)	950 (18.6%)	1237 (20.4%)	72.05 ($p < .001$)
Not first-generation	647 (69.3%)	4171 (81.4%)	4818 (79.6%)	
New or Continuing Status				
New student	325 (34.0%)	1590 (29.4%)	1915 (30.1%)	8.10 ($p < .05$)
Continuing student	632 (66.0%)	3821 (70.6%)	4453 (69.9%)	

Note: Numbers in parentheses indicate column percentages.

Advising Structures at Study Institutions

Public University 1. Public University 1 offers 22 fully online undergraduate degree programs through several of its colleges. Primary academic advising at the time of the survey regarding course selection and curriculum was provided by professional advisers located in the colleges. However, the online learning department also provided student success counselors who provide advice, information, and referral to academic and non-academic resources.

Public University 2. Public University 2 offers 15 fully online undergraduate degree programs through its online programs. Academic advising was provided at the time of the survey through regionally-based advisers assigned to each online learner. Regionally-based advisers were professional advisers who were based in communities across the state. Regionally-based advisers provided most of the advising for online learners at their institution in addition to personal academic coaching and referral to academic and non-academic resources.

Community College. The community college represented in this study offers 10 degrees fully online through its online degree program. Academic advising was provided at the time of the survey through a centralized academic advising office located on its main campus and onsite at several branch campuses. Advisers at the community college provided information on degree requirements, transfer requirements, developing educational plans, and referral to other sources of assistance across campus.

Instrumentation- Inventory of Academic Advising Functions (Student Version)

Measures for the study came from a survey instrument developed by Smith and Allen (2006), the *Inventory of Academic Advising Functions-Student Version*. The survey was adapted slightly for each institution, e.g., the name of institution was used; response options for questions that asked learners where they got their advising were actual places at the institution. A copy of the survey is included in Appendix A. The survey asked learners about the importance of and their satisfaction with academic advising, where and how often they get academic advising, and their advising learning. In addition, the survey included measures that have been linked to retention in the literature.

The survey asked "How important is advising function to you?" for each of the 12 advising functions identified by Smith and Allen (2006) as well as "How satisfied are you with the advising you receive on this function?" Table 1 contains a list of each function along with its corresponding variable name and abbreviation. For each item, learners were asked to rate the importance of and satisfaction with each advising function using a six-point Likert-type scale where scale point 1 = Not Important and scale point 6 = Very Important on the importance items and scale point 1 = Not Satisfied and scale point 6 = Very Satisfied on the satisfaction items.

In addition to the questions regarding the advising functions, learners were asked several questions regarding where they received their advising information as well as how often they received advising. Learners were asked "Which of the following

best describes where at *Name of Institution* you get your PRIMARY academic advising,

i.e., the advising you consider most central to your academic progress?" and were given

several options from a list that included institutional representatives that existed at all

institutions as well as a specific institutional office that provided advising services.

Learners also had the ability to select an option stating "I have not received academic

advising from faculty or staff at *name of institution*." Learners were then asked, "On

average, how often do you get advice from your primary source of advising, that is, the

advising you consider most central to your academic progress?" This question was

omitted for those learners who selected the no advising option. The options were: at

least once per term, at least twice per year, at least once per year, and, for learners who

accessed advising at their institution only in the past, "I'm not currently getting

academic advising from faculty or staff at *name of institution*." Learners were also asked

to "Please select the circle that best describes where at *name of institution* you get most

of your information about classes to take to meet degree requirements." Options

included the institutional representatives and advising offices listed earlier (with the

exception of the no advising option); institutional tools learners might use to self-advise

("catalog," "advising website," "advising guide"); and two options that referred to

members of the learner's informal social network ("friend(s)/other student(s)," "family

member(s)").

The survey also included eight statements that represented advising learning

outcomes that Smith and Allen (2014) found were associated with the receiving

academic advising. Table 2 lists each of the learning outcomes and its corresponding

variable name. Learners were asked to rate their level of agreement with the learning

outcome using 6-point Likert-type scales, where scale point 1 = Strong Disagree and

scale point 6 = Strongly Agree.

Finally, the survey included statements representing concepts that have been

conceptually (Tinto, 1993) and empirically (Braxton, Sullivan, & Johnson, 1997)

associated with retention. Table 5 lists each of these retention proxies and its

corresponding variable name. Learners were asked to rate their level of agree with the

retention proxies using 6-point Likert-type scales, where scale point 1 = Strongly

Disagree and scale point 6 = Strongly Agree. There are also notable crossovers between

several of the learning outcomes listed in table 2 and the retention proxies listed in

table 5.

Table 5

Advising Retention Proxies

Variable Name	Retention Proxy
Advising Satisfaction	Overall, I am satisfied with the academic advising I receive at *name of institution*.
Graduation Importance	It is important for me to graduate from college
Choosing Institution	I am confident that I made the right decision in choosing to attend *name of institution*.
Academic Plan	I have a plan to achieve my academic goals.
Has Significant Relationship	I have had at least one relationship with a faculty or staff member at *name of institution* that has had a significant and positive influence on me.
Plan to graduate	I plan to graduate from *name of institution*.
Overall Satisfaction	Overall, I am satisfied with my educational experience at *name of institution*.

Procedures

Using a secure data transfer protocol, the institutional research office at each of

the nine institutions uploaded to a secure server at Portland State University a file

containing the names and email addresses of learners who met the criteria – for

universities, fully admitted undergraduate learners enrolled during the term in which

the survey was administered and for community colleges, all learners enrolled in credit-

bearing courses during the term in which the survey was administered. Each learner's

record was assigned by the institutional research personnel from the respective

institution a unique data reference number. The survey was administered using

Qualtrics Online Survey Software licensed to Portland State University.

Learners were sent an email from a senior administrator at their institution

inviting them to participate in the web-based survey through an embedded link. The

elements of informed consent were included in the email message – the purpose of the

survey was described to the learners, and they were advised that their response would

kept confidential, their participation was voluntary, and whether or not they

participated in the survey would not affect their relationship with the university or

college. Two weeks after the initial email, a follow-up email was sent to the learners

who had not yet taken the survey, and another two weeks later a second follow-up

email was sent to the learners who had not taken the survey. As an incentive, learners

at two of the three study institutions were offered a chance to be randomly selected to

receive one of four $50 gift certificates to the institutions bookstore. Learners at the

third institution (Public University 1) were not offered the incentive because

institutional policy at that institution prohibited the use of incentives for learners to

participate in research. However, the response rate of the learners from this institution

were comparable to those of other research universities in the overall study. See

Appendix B for typical emails sent to students.

Once the survey was closed, survey responses from those who participated were

transferred to SPSS and the learners' names and email addresses were deleted. Only the

data reference number was paired with the learners' survey responses. In addition, the

original files provided by the institutional research offices which contained the names

and email addresses of learners invited to participate were destroyed.

The data reference numbers were sent to institutional research personnel at

each institution who used them to provide demographic and enrollment data on the

learners who participated in the survey. See Appendix C for a list of demographic data

provided. Each year since the survey was administered institutional research personnel

at each institution use the data reference number to provide additional continuing

enrollment and graduation data.

To identify online learners at the three study institutions, items were included in

the surveys sent to the Public University 2 and Community College I learners. Public

University I learners were asked to identify where at the institution they predominately

took classes (options included "at a distance") and Community College learners were

asked to identify their primary campus (option included online only). For Public

University 1, learners were identified in the student information system as online

students.

Portland State University's Human Subjects Research Review Committee (HSRRC)

waived review of the study determining that the study did not fall under the federal

regulations pertaining to human subjects research as it consisted of existing data with

no identifiable information. After the waiver was received, my adviser provided me with

a file containing data on the learners enrolled in the three study institutions who

participated in the survey.

Data Analyses

The purpose of this current research study is to address the gap in the online

learner academic advising literature by examining the advising attitudes, experiences,

and learning of online learners.

1. Do online learners attribute the same degree of importance to various kinds of

   academic advising as do on-campus learners?

   d. In what ways do the two groups of learners differ in how important

      various kinds of advising are to them?

   e. In what ways to online and on-campus learners differentiate among the

      importance of various kinds of advising?

   f. If differences are observed between the importance online and on-

      campus learners attributed to the various kinds of advising, are these

differences unique to their learning modality (online vs. on-campus) and

not other differences inherent in the two groups?

2. Are there differences in the advising experiences between online and on-campus

    learners in:

    a. How often they get advising and,

    b. Where they get their information about classes to take?

3. For online learners, what relationship, if any, exists between advising learning

    outcomes and online learners' advising experiences, that is,

    a. Whether and how often they get advising,

    b. Where they get information about classes to take, and

    c. How satisfied they are with the advising they receive?

Research question 1. To answer the first two sub-questions of research question

1, do the functions rated most and least important to online learner differ from those of

on-campus learners and what are the most and least important functions of academic

advising for online learners, I first conducted a series of independent samples t-tests to

determine if online learners rated the importance of each function differently than on-

campus learners. To determine if online and on-campus learners meaningfully

differentiated amongst the different advising functions, I conducted two within-subjects

analyses of variance (ANOVA). The within-subjects ANOVAs on the importance ratings of

online students demonstrated in what ways online students discriminated amongst the

importance of the 12 advising functions, that is, rated some functions as more or less

important than others. Within-subjects ANOVA testing on the importance ratings of on-campus learners determined if the relative importance they ascribe to the importance of the advising functions differ from those of online learners. Because of the potential danger of cumulative Type I errors due to multiple comparisons (Keppel, 1991). I utilized a Sidak correction method. The Sidak was chosen as a middle ground correction. Abdi (2007) suggests that both the Sidak and Bonferroni are "pessimistic" (p. 6) but that the Bonferroni is much more conservative and more likely to result in Type II errors. Given the lack of research on this topic, I determined the Sidak to be an acceptable correction for this purpose.

The third part of this question asks if the importance ratings from online learners are uniquely associated with their status as online learners rather than other characteristics. I conducted a separate multiple regression analysis of the importance rating of each of the 12 advising functions. For each regression analyses the dependent variable was the importance rating for one of the advising functions. In addition to the independent variable identifying the student as either an online or on-campus student, I controlled for six other independent variables that could have potentially exerted influence on the importance ratings: gender, age, new vs. continuing student, class level, first-generation status, and institutional context. Based on existing research, online learners are more likely to identify as female (Crawley, 2012), to be older (Radford, 2011), to be continuing students rather than new students (Crawley, 2012; Diaz & Cartnal, 2006) and to be upper-division (3rd or 4th year) students (Diaz & Cartnal,

2006). These demographic characteristics also were found to have associations with some of the academic advising functions described by Smith and Allen (2006). Prior research has also suggested that academic advising for first-generation learners can have a differential impact on retention of first-generation learners (Swecker, Fifolt, & Searby, 2013). In addition, the literature is replete with examples of the impact first-generation status has on differential achievement of first-generation learners (e.g., Ishitani, 2006; Mccarron & Inkelas, 2006; Nuñez, 1998). The final variable controlled for was the institution attended by the learner. The three study institutions were very different types of institutions with different missions and sizes. Given their varying natures and approaches to academic advising, it is a reasonable conjecture that these differences impact learners' experiences with academic advising. The regression analyses provided the relative weight of each variable/characteristic for comparison in order to determine if being an online learner was uniquely associated with the importance ratings of the academic advising functions.

Research question 2. The second question asked if there were differences in the advising experiences of online learners as compared to on-campus learners, that is, in the frequency of contact with an adviser the learner has as well as the source of their advising information. To determine with what frequency learners received advising they were asked, "Which of the following describers where at *name of institution* you get your PRIMARY academic advising, that is, the advising you consider most central to your academic progress?" Learners could select from several options including general

institutional representatives (faculty advisers in area of study) as well as varied advising

offices that were unique to each institution. Learners could also select "I have not

received academic advising from faculty or staff at *name of institution."* If the learner

selected any option other than "I have not received academic advising," they were then

asked "On average, how often do you get advice from your primary source of advising,

that is, the advising you consider most central to your academic progress?" Learners

could select from: at least once a term, at least twice per year, at least once per year

and, for students who had received advising only in the past, "I'm not currently getting

advising from faculty or staff at *name of institution."* To operationalize the frequency of

advising received by learners, responses were assigned to one of three groups: *not*

advised/not currently advised for learners who had not or were currently not receiving

academic advising from faculty or staff, *once per year* for learners who received advising

at least once per year, and *more than once per year* including learners who marked that

they received advising at least twice per year or once per term.

Learners were also asked, "Please select the circle that best describes where at

name of institution you get most of your information about classes to take to meet

degree requirements." Learners could select from multiple options including those listed

in the previous question with the exception of the no advising option. Other option

included tools the learner could use to self-advise (e.g., "catalog", "website", "advising

guide") and two options from a learner's social network ("friend(s)/other student(s)",

"family members)." To operationalize the source of advising information for learners, I

grouped them into three groups based on their responses: *adviser* group for those

learners who selected institutional faculty/staff or advising offices, *advising tools* for

those learners who used self-advising tools provided by the institution, and an *informal*

social network group for those who selected "friend(s)/other student(s)" or "family

members" as the primary source of advising information. The groupings for both

questions mirror the format of the research conducted by Smith and Allen (2013) on

advising learning outcomes.

To determine if differences existed between online and on-campus learners and

their frequency of contact with an adviser, a chi-square analysis was conducted to

determine what, if any, relationship exists between learning modality (online or on-

campus) and frequency of advising contact. Similarly, to determine if differences exist

between online and on-campus learners and their primary source of advising

information, a chi-square analysis was conducted to determine what, if any, relationship

exists between learning modality (online or on-campus) and the primary source of

advising information.

Research question 3. The third research question involves examining the

potential relationships between each of the eight advising learning outcomes and online

learner's advising experiences, that is, 1) whether and how often online learners get

advising, 2) where online learners get information about classes to take, and 3) how

satisfied online learners are with the advising they receive. The first two sub-questions

are replications of Smith and Allen's (2014) study of advising learning outcomes and

whether frequency of advising and source of information on what classes to take

influence learning across those advising learning outcomes. The third sub-question

arose from Smith and Allen's suggestion that "information on the role of advising

satisfaction in advising learning may also prove useful" (p. 60).

To answer the first two sub-questions, I conducted two one-way ANCOVAs to

determine if mean scores on the eight learning outcomes varied in a meaningful way

among the three advising frequency groups and three advising information source

groups identified in the data analysis described for question four. A Sidak correction was

applied to correct for potential Type I errors due to multiple comparisons. One-way

ANCOVAs were used to control for covariates that could potentially affect learning from

advising encounters. The first of these covariates was the institution the learner is

attending. Institutional context was considered as Hemwall and Trachte (2003) suggest

that smaller institutions may produce more advising learning than larger institutions.

The other two covariates were whether the learner was newly enrolled and the GPA of

the learners as newly enrolled learners are predicted to have achieved less learning than

those with longer tenure at the institution and GPA has been determined to have an

impact on several other student outcomes (Smith & Allen, 2014).

To determine how satisfied learners were overall with the academic advising

they were receiving, learners were asked to mark their level of agreement with the

following statement: "Overall, I am satisfied with the academic advising I receive at

name of institution." They were given the option of selecting their level of agreement on

a six-point Likert-type scale where 1 = strongly disagree and 6 = strongly agree. To

measure the impact of satisfaction on each of the eight learning outcome measures, I

conducted eight separate simultaneous regression analyses using the learner's

satisfaction ratings as the independent variable and the learning outcome measure as

the dependent variable. I also included several co-variates to isolate the effect of learner

satisfaction. Those covariates included: institution, gender, age, new or continuing

student, first-generation status, class level, and GPA.

Summary and Limitations

In this chapter I explained the methodological approach for this study.

Additionally, I discussed the participants, instrumentation, procedures, and data analysis

approaches for each of the research questions.

There are several important limitations to this study. First, the present study is a

correlational study of existing data. Correlations simply indicates that a relationship

between two or more variables exists. Since variables may be associated with out there

necessarily being a causal relationship, the conclusions cannot be used to make

statements about causal relationships. Also, while all learners meeting the criteria to be

surveyed were offered the opportunity to complete the survey, not all chose to do so.

The learners who did choose to participate may not necessarily be fully representative

of the entire study population. Finally, the survey relied on self-report data that may not

be fully reflective of a learner's actual experience. However, as mentioned previously,

there is little extant data on online learners' experience with academic advising and

even less that includes learners' voices. As such it is imperative that self-report data be

included to better fill in the gaps in existing research.

Chapter 4: Results

This study was intended to examine how online learners rate the importance of academic advising functions and how satisfied they are with the advising they receive on those functions. Are those differences uniquely associated with the online modality? Do differences exist between online and on-campus learners in how often they receive advising and their sources of information about what classes to take? Additionally, for online learners, what relationship might exist between the eight learning outcomes and advising satisfaction, frequency, and source of advising information?

Research Question 1

Do online learners attribute the same degree of importance to various kinds of academic advising as do on-campus learners?

a) *In what ways do the two groups of learners differ in how important various kinds of advising are to them?*

b) *In what ways do online and on-campus learners differentiate among the importance of various kinds of advising?*

c) *If differences are observed between the importance online and on-campus learners attributed to the various kinds of advising, are these differences unique to their learning modality (online vs. on-campus) and not other differences inherent in the two groups?*

The means and standard deviations of the importance ratings for both online and on-campus learners are presented in Table 6. For on-campus learners, importance

ratings were all between scale points 4.17 and 5.62 with all importance ratings for on-campus learners on the important end of the scale (i.e., above scale point 4 on a 6-point scale). For online learners, importance ratings ranged from 3.61 to 5.80. Two functions, *out of class connect* and *referral non-academic*, were rated at 3.61 and 3.80, respectively, by online learners meaning that they were no more than moderately important to those learners. All other functions were rated on the important end of the scale (above 4.80) by the online learners.

Do the two groups differ in how important various kinds of advising are important to them? To determine in what ways the groups of learners (online and on-campus) differed in how important the various kinds of advising are to them, I conducted independent samples *t*-tests comparing the importance ratings of online and on-campus learners for each of the 12 functions. Results of the *t*-tests are presented in Table 8 and illustrate that of the two groups of learners differed on eight of the 12 functions. Online learners rated four of the functions (*accurate information, major connect, overall connect*, and *how things work*) significantly more important than on-campus students and rated four of the functions (*know as individual, referral academic, out of class connect*, and *referral non-academic*) significantly less important than on-campus students. I observed no significant differences between the importance ratings of online and on-campus learners on the remaining four functions (*gen ed connect, degree connect*, and *skills, abilities, interests*). Online learners rated both information functions and two of the integration functions (*overall connect* and *major connect*)

significantly more important than did on-campus learners. They also rated the two

referral functions, one of the integration functions (*out of class connect*), and one of the

individuation functions (*know as individual*) as significantly less important than did on-

campus students.

In what ways to online and on-campus learners differentiate among the

importance of various kinds of advising? To determine whether learners in both groups

meaningfully differentiate among the importance of the advising functions (e.g., rated

some functions as more important than other functions), I conducted one-way, within-

subjects ANOVAs on the importance ratings. To correct for multiple comparisons, I used

the Sidak correction. For both within-subject analyses, Mauchly's test reported that the

assumption of sphericity had been violated, $\chi^2(65)$ = 2041.64 and 6714.06 for online and

on-campus learners respectively. These violations were addressed by correcting degrees

of freedom using Greenhouse-Geisser estimates of sphericity, ε = .66 and .78 for online

and on-campus learners respectively. The one-way within-subjects ANOVAs

demonstrated that online and on-campus learners meaningfully differentiated the

importance amongst the various advising functions, $F(7.29, 6162.02)$ = 285.72, $p < .001$,

and $F(8.63, 39500.54)$ = 645.82, $p < .001$, respectively.

Results of post hoc analysis of the one-way within-subjects ANOVA for each

group are presented in Table 8. For both groups *accurate information* (online M = 5.80,

SD = 0.56 and on-campus M = 5.62, SD = 0.75) was rated as the most important

function. For both groups, this was also the function with lowest standard deviation.

Major connect (online *M* = 5.38, *SD* = 0.97 and on-campus *M* = 5.15, *SD* = 1.02) was

rated as among the most important functions and had among the lowest standard

deviations for both groups. *Referral non-academic* (online *M* = 3.80, *SD* = 1.92 and on-

campus *M* = 4.17, *SD* = 1.63), *referral academic* (online *M* = 4.42, *SD* = 1.66 and on-

campus *M* = 4.58, *SD* = 1.43), and *out of class connect* (online *M* = 3.61, *SD* = 1.89 and

on-campus *M* = 4.51, *SD* = 1.48) were rated by both groups of learners as least

important. The standard deviations for these three functions were the highest of all the

functions for both online and on-campus learners but online learners reported even

higher deviations than did on-campus learners. Online and on-campus learners rated

the importance of *know as individual* differentially with online learners rating the

function as nine out of 12 in importance (*M* = 4.80, *SD* = 1.41) and on-campus learners

rating it within the top half of the functions in importance (*M* = 4.97, *SD* = 1.23).

Table 6

Means, Standard Deviations, and Results of Independent Samples t Tests of On-campus and Online Student Importance Ratings; and Post Hoc Analyses of One-Way Within-Subjects ANOVAs of Student Importance Ratings

Advising Function	On-Campus			Online			Independent Samples *t* Tests		
	n	*M*	*SD*	*n*	*M*	*SD*	*t*	*df*	*p*
Integration									
Overall Connect	4579	5.01_d	1.10	846	5.32_b	1.02	7.90	6019.0	.000
Major Connect	4579	5.15_b	1.02	846	5.38_b	0.97	6.28	5893.0	.000
Gen Ed Connect	4579	4.73_f	1.30	846	5.14_{de}	1.14	9.03	1386.7	.384
Degree Connect	4579	4.72_f	1.43	846	4.92_{ef}	1.43	3.82	5871.0	.197
Out-of-Class Connect	4579	4.51_g	1.48	846	3.61_j	1.89	-13.56	1125.8	.000
Referral									
Academic	4579	4.58_g	1.43	846	4.42_i	1.66	-2.43	1171.7	.015
Non-Academic	4579	4.17_h	1.63	846	3.80_j	1.92	-5.39	1145.9	.000
Information									
Accurate Information	4579	5.62_a	0.75	846	5.80_a	0.56	8.92	1590.0	.000
How Things Work	4579	4.96_d	1.23	846	5.17_c	1.22	4.97	5752.0	.000
Individuation									
Skills, Abilities, Interests	4579	5.07_c	1.11	846	5.01_{def}	1.36	-1.36	1129.6	.175
Know as Individual	4579	4.97_d	1.23	846	4.80_h	1.41	-3.16	1181.7	.002
Shared Responsibility									
Shared Responsibility	4579	4.86_e	1.27	846	4.84_g	1.43	-0.24	1188.7	.809

Note. Ratings were made on 6-point scales from 1 (*not important*) to 6 *(very important).* Within the on-campus and online importance ratings columns, means with difference subscripts differ at *p* < .05 minimally using the Sidak correction for multiple comparisons, with subscript "a" signifying the highest rated functions and subscript "i" signifying the lowest rated functions.

Are these differences unique to their learning modality and not other

differences inherent in the two groups? To answer this question, I conducted multiple

simultaneous regression analyses using online and on-campus learners' importance

ratings of the various academic advising functions as the criterion variable. To test to

see if the importance ratings were uniquely associated with learners' status as an online

learner and not other differences between the two groups, I also included institution,

gender, age, new student status, first-generation, and class level as control variables.

For each test, I found there were independence of residuals with Durbin-Watson (a test

of autocorrelations in the residuals) statistics ranging from 1.96 to 2.05. There was also

no evidence of multicollinearity, as assessed by reviewing the VIF (Variance Inflation

Factors) statistics and finding no tolerance values of greater than 0.1. The results of the

multiple simultaneous regressions and related statistics are displayed in Table 7.

As presented in Table 7, the statistical model was significant ($p < .001$) for each

of the twelve functions of academic advising. Being an online learner predicted eight of

the twelve importance ratings (*gen ed connect, out of class connect, referral academic,*

referral non-academic, accurate information, know as individual, shared responsibility,

and *skills, abilities, and interests*) even when controlling for other potential predictor

variables. For two of the functions (*gen ed connect* and *accurate information*), being an

online learner predicted higher importance ratings. For the other six functions (*out of*

class connect, referral academic, referral non-academic, know as individual, shared

responsibility, and *skills, abilities, and interests*) being an online learner predicted lower

importance ratings for those functions.

Table 7

Results of Multiple Simultaneous Regression Analyses Predicting Importance Ratings of Advising Functions Based on Modality (Online vs On-campus) (Significant Effects Only)

	Advising Functions											
	oc	mc	gec	dc	out	ra	rn	how	ai	sai	kai	sr
	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig
Online Student			-.03*		.18***	.11***	.13***		-.03*	.07**	.11***	.07***
Public University 1				-.10***		-.05*	-.07***	-.05*			-.09***	-.11***
Community College	-.06**				-.05*	-.06**	-.11***		.04*	-.04*	-.15***	-.06**
Gender	.11***	.11***	.12***	.13***	.07***	.12***	.15***	.13***	.12***	.13***	.13***	.08***
Age	.14***	.12***	.14***	.09***	-.07***	.10***		.09***	.08***	.05**		.04**
New Student		-.04**	-.05***	-.03*				-.04*				
First Generation			.05**	.04**	.03*	-.06***	.09***			.06***	.05**	.07***
Class Level			-.08***	-.05**		-.10***	-.08***		.12***	-.05**		-.04*
R^2	.04	.03	.06	.05	.06	.04	.05	.03	.04	.03	.03	.03
F	30.04***	21.11***	47.42***	38.83***	43.94***	30.48***	36.94***	24.27***	27.16***	20.41***	24.65***	21.61***

Note. Online student was coded as 1 = online, 2 = non online; public university 1 was coded 1 = yes, 0 = no; community college was coded 1 = yes, 0 = no; gender was coded as 0 = male, 1 = female; age was a calculated field based on the respondents age at the time of survey administration; new student was coded as 1 = continuing student, 0 = new student; first generation was coded as 0 = not first generation, 1 = first generation; class level was coded 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior. * $p < .05$; ** $p < .01$; *** $p < .001$.

Research Question 2

Are there differences in the advising experiences between online and on-campus learners

in:

      a.   How often they get advising and,

      b.   Where they get their information about classes to take?

      Frequency of advising. To determine if there were differences between online

and on-campus learners and their frequency of advising, I conducted a chi-square

analysis using modality (online or on-campus) and whether or how often they were

advised as the variables. All expected cell frequencies were greater than 5. Frequency of

advising was divided into three levels: not advised for those who have not been advised

or are not currently being advised, advised occasionally for those who received advising

at least once per year, and advised frequently for those who reported receiving advising

at least twice per year or once per term. The results of the Chi-square test revealed that

the overall model was not significant, χ^2 = 4.92, df = 2, *p* > .05. The results of the chi-

square analysis are displayed in Table 8.

Table 8

Results of Chi-square test and Descriptive Statistics for Frequency of Advising by Modality

Frequency of Advising (total *n* = 6145)	Online Learners (# and % of group)	On-Campus Learners (# and % of group)	Totals (# and % of group)
Not Advised/Not Currently Advised	97 (10.4%)	496 (9.5%)	593 (9.7%)
Once per Year	135 (14.4%)	632 (12.1%)	767 (12.5%)
More than Once per Year	704 (75.2%)	4081 (78.3%)	4785 (77.9%)

Note. χ^2 = 4.92, df = 2, *p* > .05. Numbers in parentheses indicate column percentages.

Source of advising information. To determine if there were significant

differences between online and on-campus learners in what they identified as where

they get most of their information about classes to take to meet degree requirements, I

conducted a chi-square analysis using modality (online or on-campus) and source of

advising information as the variables. All expected cell frequencies were greater than 5.

In the survey instrument, learners were asked to select from multiple potential sources

of advising information. I operationalized those sources into three groups: *adviser* group

for those learners who selected institutional faculty/staff or advising offices, *advising*

tools (e.g., class catalog, advising website, advising guide) for those learners who used

self-advising tools provided by the institution, and an *informal social network* group for

those who selected "friend(s)/other student(s)" or "family members" as the primary

source of advising information. The results of the chi-square analysis are displayed in

table 9.

Table 9

Results of Chi-square test and Descriptive Statistics for Source of Information by Modality

Source of Information (total n = 6093)	Online Learners (# and % of group)	On-Campus Learners (# and % of group)	Totals (# and % of group)
Adviser	590 (63.0%)	3117 (60.4%)	3707 (60.8%)
Advising Tools	327 (34.9%)	1727 (33.5%)	2054 (33.7%)
Informal Social Network	19 (2.0%)	313 (6.1%)	332 (5.4%)

Note. χ^2 = 25.09, df = 2, p < .001. Numbers in parentheses indicate column percentages.

The results of the chi-square analysis demonstrated that the overall model is statistically significant, χ^2 = 25.09, df = 2, p < .001. To determine which interactions were significant, I also conducted chi-square analyses for each group of advising source of information. For those who reported that their primary source of advising information was an institutional adviser, there was no significant difference between online and on-campus learners, χ^2 = 2.23, df = 1, p > .05. Additionally, for those who reported self-advising using advising tools as their primary source of information, no significant difference was found between online and on-campus learners, χ^2 = 0.74, df = 1, p > .05. For the third group who utilized an informal social network as their primary source of information, a significant difference was found between online and on-campus learners, χ^2 = 25.09, df = 1, p < .001, with on-campus learners using informal social networks roughly 3 times as often as online learners.

Research Question 3

What relationship, if any, exists between advising learning outcomes and online

learners' advising experiences, that is,

  a) *Whether and how often they get advising,*

  b) *Where they get information about classes to take, and*

  c) *How satisfied they are with the advising they receive?*

Whether and how often they get advising. Online learners were grouped into

the three groups: those who had not been advised or were not currently receiving

advising, those who were advised once per year and, those who received advising more

than once per year. I then conducted an ANCOVA to measure learning across the eight

learning outcomes while controlling for the effects of other potential confounding

variables including: new or continuing student status, GPA, and institution. I utilized the

Sidak correction to correct for multiple tests. A review of the relevant Levene's statistics

demonstrated that each test met the requirements for equality of variances.

An important assumption in the use of ANCOVA is homogeneity of regression

slopes. In the assumptions testing for this analysis, I found that there were some

violations of this assumption. Testing revealed that there were significant interactions

between the covariates and the independent variables on 12 of 32 (38%) interactions

tested. The η^2 (partial eta squared), which is a measure of effect size, ranged from .008

to .023 meaning that the significant interactions accounted for no more than 2.3% of

the variance. These effect sizes can be considered within the small range (Cohen, 1988).

In all but three interactions, the η^2 was less than 1%. Additionally, with the large sample size the chances of finding significant interactions are greatly increased. Finally, as noted in Table 10, each model was found to be significant at the $p < .001$ level. This level of significance combined with the relatively small effect of the interaction as measured by η^2 provides a level of confidence that there are not Type I errors. Nevertheless, some caution should be assumed in interpreting these results.

Table 10

Relationship Between Frequency of Advising and Advising Learning Outcomes: Means of Agreement Ratings for Each Group, and ANCOVA Results (Online only)

	Frequency of Advising						
	More Than Once Per Year		Once Per Year		Not Advised/Not Currently Advised		
Learning Outcome	Unadjusted M (SD)	Adjusted M	Unadjusted M (SD)	Adjusted M	Unadjusted M (SD)	Adjusted M	Results of ANCOVAs
Knows Requirements	5.30 (0.99)	5.28$_b$	4.89 (1.23)	4.90$_a$	4.54 (1.57)	4.62$_a$	$F(2, 887) = 14.97$, $MSE = 1.19$, $p < .001$, $\eta^2 = .03$
Knows Resources	4.77 (1.31)	4.76$_b$	3.48 (1.60)	3.52$_a$	3.87 (1.87)	3.87$_a$	$F(2, 884) = 46.91$, $MSE = 1.98$, $p < .001$, $\eta^2 = .10$
Understands How Things Work	4.87 (1.14)	4.87$_b$	4.11 (1.44)	4.12$_a$	4.24 (1.49)	4.25$_a$	$F(2, 884) = 23.87$, $MSE = 1.48$, $p < .001$, $\eta^2 = .05$
Understands Connections	5.28 (0.95)	5.27$_b$	4.77 (1.24)	4.81$_a$	4.85 (1.33)	4.88$_a$	$F(2, 885) = 12.35$, $MSE = 1.06$, $p < .001$, $\eta^2 = .03$
Has Educational Plan	5.65 (.70)	5.66$_b$	5.33 (1.11)	5.34$_a$	5.31 (1.07)	5.26$_a$	$F(2, 922) = 13.80$, $MSE = 0.64$, $p < .001$, $\eta^2 = .03$
Values Advisor/Advisee Relationship	5.39 (.91)	5.38$_b$	5.07 (1.16)	5.05$_a$	4.63 (1.39)	4.76$_a$	$F(2, 919) = 15.92$, $MSE = 2.81$, $p < .001$, $\eta^2 = .03$
Supports Mandatory Advising	4.84 (1.32)	4.81$_a$	4.18 (1.71)	4.15$_b$	4.3 (1.62)	4.60$_a$	$F(2, 886) = 11.43$, $MSE = 1.98$, $p < .001$, $\eta^2 = .03$
Has Significant Relationship	4.26 (1.63)	4.24$_b$	3.39 (1.76)	3.44$_a$	3.39 (2.07)	3.51$_a$	$F(2, 890) = 16.45$, $MSE = 1.00$, $p < .001$, $\eta^2 = .04$

Note. Ratings were made on 6-point scales (1 = *strongly disagree*, 6 = *strongly agree*). Covariates: institution, GPA, and New Student. Within each row, means with different subscripts differ at the $p < .05$ level minimally using the Sidak correction for multiple comparisons..

All eight ANCOVAs were significant at the $p < .001$ level with partial η2 values ranging from .03 to .10. Mean ratings for the 7 of the 8 learning outcomes listed in Table 10 demonstrate that learners who report being advised more than once per year were more likely to agree than learners in the other two groups that they: knew academic requirements, knew their resources, understood how things worked at their institution, understood connections between their academics and future goals, had an educational plan, valued the adviser/advisee relationship, and had a relationship with a faculty or staff member that had a significant and positive influence. The one learning outcome result that presented a different pattern of ANCOCA results was related to online learners supporting mandatory advising. Online learners who reported being advised more than once per year and those who reported no advising or no current advising both agreed on their support for mandatory advising. Online learners who were advised once per year were statistically less likely to agree that there should be mandatory advising than the other two groups. Consistently, the highest mean ratings were reported by online learners advised more than once per year. Additionally, the agreement ratings for online learners advised more than once a year tended towards the strongly agree end of the scale with the lowest rating at 4.24. With the one exception of the outcome related to mandatory advising, there were no other observed difference in ratings between those online learners who were advised once per year and online learners not advised or not currently advised.

Where they get information about classes to take. Table 11 contains the

ANCOVA results comparing three groups separated by their primary source of

information about what classes to take: online learners who received advising from an

academic adviser, online learners who used advising tools, and online learners who

utilized informal social networks. Three additional covariates were included in the

model to control for their influence: new or continuing student status, GPA, and

institution. A Sidak correction was applied to correct for multiple tests. A review of the

relevant Levene's tests demonstrated that there were equality of variances and this

assumption was met.

As discussed earlier, homogeneity of regression slopes is a key assumption in the

use of ANCOVA. For this analysis, nine of the 32 tests or 28% demonstrated violations of

this assumption. I examined the effect sizes of the violations by reviewing the relevant

η^2 values for the affected tests. The η^2 values ranged from .007 to .02 meaning that the

significant interactions accounted for no more than 2.0% of the variance. These small η^2

values combined with the highly significant results as shown in table 11 suggest that the

overall statistical model is still valid. However, given these violations the results should

be interpreted with some caution.

Each model was found to be statistically significant meaning there was

differentiation amongst the three groups. Those online learners who utilized

institutional faculty/staff or advising offices were statistically more likely to report

higher scores across all eight learning outcomes measures. For three of the learning

outcomes (*knows requirements, understands connections, and has significant relationship*), there was a statistically significant difference between the online learners who used advising tools and online learners who used informal social networks with online learners in the former group scoring higher. For the remainder of the learning outcomes (*knows resources, understands how things work, has educational plan, values advisor/advisee relationship, and supports mandatory advising*), there were no significant differences in mean scores between those online learners who used advising tools and online learners who used informal social networks.

Table 11

Relationship Between Source of Advising and Advising Learning Outcomes: Means of Agreement Ratings for Each Group, and ANCOVA Results (Online Only)

	Source of Advising						
	Adviser		Advising Tools		Informal Social Networks		
Learning Outcome	Unadjusted *M (SD)*	Adjusted *M*	Unadjusted *M (SD)*	Adjusted *M*	Unadjusted *M (SD)*	Adjusted *M*	Results of ANCOVAs
Knows Requirements	5.34 (0.95)	5.33$_a$	4.96 (1.23)	4.98$_b$	3.56 (1.85)	3.61$_c$	$F(2, 890) = 26.61$, $MSE = 1.15$, $p < .001$, $\eta^2 = .06$
Knows Resources	4.79 (1.35)	4.79$_a$	4.05 (1.60)	4.05$_b$	3.44 (1.58)	3.37$_b$	$F(2, 886) = 28.49$, $MSE = 2.05$, $p < .001$, $\eta^2 = .06$
Understands How Things Work	4.89 (1.14)	4.89$_a$	4.43 (1.36)	4.43$_b$	3.83 (1.58)	3.80$_b$	$F(2, 887) = 16.80$, $MSE = 1.50$, $p < .001$, $\eta^2 = .04$
Understands Connections	5.33 (.90)	5.33$_a$	4.93 (1.17)	4.94$_b$	4.22 (1.70)	4.18$_c$	$F(2, 887) = 20.09$, $MSE = 1.03$, $p < .001$, $\eta^2 = .04$
Has Educational Plan	5.65 (.75)	5.65$_a$	5.48 (.89)	5.47$_b$	5.06 (1.26)	5.02$_b$	$F(2, 924) = 8.70$, $MSE = 0.65$, $p < .001$, $\eta^2 = .02$
Values Advisor/Advisee Relationship	5.44 (.88)	5.43$_a$	5.00 (1.16)	5.02$_b$	4.67 (1.46)	4.81$_b$	$F(2, 892) = 16.71$, $MSE = 0.99$, $p < .001$, $\eta^2 = .04$
Supports Mandatory Advising	4.91 (1.31)	4.88$_a$	4.37 (1.54)	4.41$_b$	3.65 (1.87)	3.86$_b$	$F(2, 888) = 12.77$, $MSE = 1.96$, $p < .001$, $\eta^2 = .03$
Has Significant Relationship	4.34 (1.58)	4.34$_a$	3.62 (1.85)	3.64$_b$	2.24 (1.72)	2.25$_c$	$F(2, 923) = 25.42$, $MSE = 2.75$, $p < .001$, $\eta^2 = .05$

Note. Ratings were made on 6-point scales (1 = *strongly disagree*, 6 = *strongly agree*). Covariates: institution, GPA, and New Student. Within each row, means with different subscripts differ at the *p* < .05 minimally using the Sidak correction for multiple comparisons.

How satisfied they are with the advising they receive. The results of a multiple simultaneous regressions exploring the relationship between learners' overall satisfaction with the advising they had received and the eight advising learning outcomes are found in table 12. To test if learning was uniquely correlated with satisfaction, I included several other variables (institution, gender, age, new or continuing student status, first generation status, class level, and GPA) as control variables. There was independence of residuals, as assessed by examining Durbin-Watson test results and finding that they ranged from 1.97 to 2.15. There was no evidence of multicollinearity on any of the regressions, as assessed by reviewing the VIF results and finding no tolerance values greater than 0.1. Regressions results for each learning outcome are described below.

Knows requirements. Regression analysis revealed that the model significantly predicted online learners' scores for *knows requirements* learning outcome, $F(9, 881) = 25.93$, $p < .001$. Adjusted R^2 for the model was .21. In terms of individual relationships between the independent variables and the learning outcome, Satisfaction ($t = 13.87$, $p < .001$), Public University 1 ($t = -1.36$, $p < .01$), Community College ($t = 0.59$, $p < .001$), Class Level ($t = 2.35$, $p < .001$), and GPA ($t = 2.27$, $p < .01$) each significantly predicted online learners' scores for the learning outcome, *knows requirements.* Cohen's ƒ2, a measure of effect size, was calculated at .27.

Knows resources. Regression analysis revealed that the model significantly

predicted online learners' scores for the *knows resources* learning outcome, $F(9, 879) =$

47.91, $p < .001$. Adjusted R^2 for the model was .33. In terms of individual relationships

between the independent variables and the learning outcome, Satisfaction ($t = 19.65$, p

$< .001$), Public University 1 ($t = -1.52$, $p < .001$), Community College ($t = 0.15$, $p < .05$),

Age ($t = 1.04$, $p < .05$), and GPA ($t = 2.95$, $p < .01$) each significantly predicted online

learners' scores for the learning outcome, *knows resources.* Cohen's ƒ2, a measure of

effect size, was calculated at .49.

How things work. Regression analysis revealed that the model significantly

predicted online learners' scores for the *how things work* learning outcome, $F(9, 879) =$

31.83, $p < .001$. Adjusted R^2 for the model was .25. In terms of individual relationships

between the independent variables and the learning outcome, Satisfaction ($t = 16.03$, p

$< .001$), Public University 1 ($t = 1.21$, $p < .01$), Gender ($t = 2.13$, $p < .05$), and Age ($t = -$

2.56, $p < .05$) each significantly predicted online learners' scores for the learning

outcome *how things work.* Cohen's ƒ2, a measure of effect size, was calculated at .33.

Understands connections. Regression analysis revealed that the model

significantly predicted online learners' scores for the *understands connections* learning

outcome, $F(9, 880) = 14.53$, $p < .001$. Adjusted R^2 for the model was .13. In terms of

individual relationships between the independent variables and the learning outcome,

Satisfaction ($t = 10.08$, $p < .001$), Public University 1 ($t = -2.49$, $p < .001$), Community

College ($t = -0.25$, $p < .05$), Age ($t = 1.58$, $p < .05$), and First-Generation Status ($t = 1.53$, p

< .05) each significantly predicted online learners' scores for the learning outcome

understands connections. Cohen's ƒ2, a measure of effect size, was calculated at .19.

Has educational plan. Regression analysis revealed that the model significantly

predicted online learners' scores for the *has educational plan* learning outcome, $F(9,$

917) = 14.92, $p < .001$. Adjusted R^2 for the model was .13. In terms of individual

relationships between the independent variables and the learning outcome, Satisfaction

($t = 10.16$, $p < .001$), Public University 1 ($t = -1.10$, $p < .05$), Class Level ($t = 1.22$, $p < .05$),

and GPA ($t = 4.23$, $p < .001$) each significantly predicted online learners' scores for the

learning outcome *has educational plan.* Cohen's ƒ2, a measure of effect size, was

calculated at .19.

Values adviser-advisee relationship. Regression analysis revealed that the

model significantly predicted online learners' scores for the *values adviser-advisee*

relationship learning outcome, $F(9, 884) = 6.22$, $p < .001$. Adjusted R^2 for the model was

.06. In terms of individual relationships between the independent variables and the

learning outcome, Satisfaction ($t = 5.13$, $p < .001$), Community College ($t = -2.92$, $p <$

.001), Age ($t = 2.56$, $p < .01$), and Class Level ($t = 0.45$, $p < .01$) each significantly

predicted online learners' scores for the learning outcome *values adviser-advisee*

relationship. Cohen's ƒ2, a measure of effect size, was calculated at .06.

Supports mandatory advising. Regression analysis revealed that the model

significantly predicted online learners' scores for the *supports mandatory advising*

learning outcome, $F(9, 880) = 4.99$, $p < .001$. Adjusted R^2 for the model was .05. In terms

of individual relationships between the independent variables and the learning

outcome, Satisfaction (t = 3.62, p < .001), Community College (t = -2.92, p < .001), Age (t

= 2.08, p < .01), and Class Level (t = 0.55, p < .01) each significantly predicted online

learners' scores for the learning outcome *supports mandatory advising.* Cohen's ƒ2, a

measure of effect size, was calculated at .05.

     Has significant relationship. Regression analysis revealed that the model

significantly predicted online learners' scores for the *has significant relationship* learning

outcome, $F(9, 915)$ = 25.36, p < .001. Adjusted R^2 for the model was .20. In terms of

individual relationships between the independent variables and the learning outcome,

Satisfaction (t = 12.90, p < .001), Public University 1 (t = -3.04, p < .01), Community

College (t = 0.06, p < .01), Age (t = 2.06, p < .001), New Student (t = 3.56, p < .01), and

First-Generation Status (t = 1.66, p < .01) each significantly predicted online learners'

scores for the learning outcome *has significant relationship.* Cohen's ƒ2, a measure of

effect size, was calculated at .25.

Table 12

Simultaneous Multiple Regressions Exploring the Relationship Between Satisfaction and Advising Learning Outcomes (Significant Effects Only) (Online Only)

	Covariates											
	Sat.	Pub Uni 1	CC	Gender	Age	New stud	1st Gen	Class Lvl	GPA	R^2	f^2	F
Learning Outcomes	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig	β Sig			
Knows reqs.	.43***	.04**	-.02***					.08***	.07**	.21	.27	25.93***
Knows resources	.56***	.04***	.01*		.03*				.08**	.33	.49	47.91***
How things work	.48***	.04**		.06*	.04*					.25	.33	31.83***
Connections	.33***	-.08***	-.01*		.05*		.05*			.13	.19	14.53***
Has ed. plan	.32***	-.04*						.05*	.13***	.13	.19	14.92***
Values relationship	.17***		-.09***	.07*	.09**			.02**		.06	.06	6.22***
Mandatory advising	.12***		-.16***		.07**			.02**		.05	.05	4.99***
Sig. relationship	.39***	-.09**	<.00**		.06***	.11**	.06**	.06**		.20	.25	25.36***

Note. Overall satisfaction with advising was coded 1 – 6; Public university 1 was coded 1 = yes, 0 = no; community college was coded 1 = yes, 0 = no; gender was coded as 0 = male, 1 = female; age was a calculated field based on the respondents age at the time of survey administration; new student was coded as 1 = continuing student, 0 = new student; first generation was coded as 0 = not first generation, 1 = first generation; class level was coded 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior. GPA was institutional GPA reported at time of survey. * *p* < .05; ** *p* < .01; *** *p* < .001.

Summary of Results

For ease of reference, table 13 presents a summary of the results of the three

questions and their related subquestions.

Table 13

Summary of Results

Question	Statistical Method	Results
1a	Independent samples *t*-test	Online and on-campus learners differed on 8 of the 12 functions. Online learners rated *ai, mc, oc, how* higher and *kai, ra, out, rn lower.*
1b	One-way within-subjects ANOVA	Both online and on-campus learners meaningfully differentiated the importance of the advising functions.
1c	Multiple simultaneous regressions	Being an online learner predicted 8 of the 12 advising functions: *gec, out, ra, rn, ai, kai, sr, sai.*
2a	Chi-square	No significant difference between online and on-campus learners in how often they are advised.
2b	Chi-square	No significant differences between online and on-campus learners in source of advising information for *adviser* and *advising tools* groups. Online learners use their informal social networks 3x less than on-campus learners.
3a	ANCOVA	Those advised more than 1x/year reported more learning on 7 outcomes. Those advised more than 1x/year and not advised reported higher scores for *supports mandatory advising* when compared to those advised 1x/year
3b	ANCOVA	Those advised by advisers or advising offices reported more learning on all 8 outcomes.
3c	Multiple simultaneous regressions	Satisfaction with advising significantly predicted greater reported learning even when controlling for a variety of other factors.

Chapter 5: Discussion of Results, Limitations, Implications for Practice, and Future

Research

This study was intended to examine how online learners rate the importance of academic advising functions and how satisfied they are with the advising they receive on those functions. Are those differences uniquely associated with the online modality? Do differences exist between online and on-campus learners in how often they receive advising and their sources of information about what classes to take? Additionally, what relationship might exist between the eight learning outcomes and advising satisfaction, frequency, and source of advising information? In this chapter, I will discuss the results from each research question, implications for practice and directions for future research, and limitations.

Research Questions

This study attempted to answer the following research questions:

1. Do online learners attribute the same degree of importance to various kinds of academic advising as do on-campus learners?

    a. In what ways do the two groups of learners differ in how important various kinds of advising are to them?

    b. In what ways do online and on-campus learners differentiate among the importance of various kinds of advising?

    c. If differences are observed between the importance online and on-campus learners attributed to the various kinds of advising, are these

differences unique to their learning modality (online vs. on-campus) and

not other differences inherent in the two groups?

2. Are there differences in the advising experiences between online and on-campus

   learners in:

   a. How often they get advising and,

   b. Where they get their information about classes to take?

3. For online learners, what relationship, if any, exists between advising learning

   outcomes and online learners' advising experiences, that is,

   a. Whether and how often they get advising,

   b. Where they get information about classes to take, and

   c. How satisfied they are with the advising they receive?

Question 1: Discussion

Do online learners attribute the same degree of importance to various kinds of academic

advising as do on-campus learners?

   a) *In what ways do the two groups of learners differ in how important various kinds*

      of advising are to them?

   b) *In what ways to online and on-campus learners differentiate among the*

      importance of various kinds of advising?

   c) *If differences are observed between the importance online and on-campus*

      learners attributed to the various kinds of advising, are these differences unique

to their learning modality (online vs. on-campus) and not other differences

inherent in the two groups?

In reviewing the results of the t-tests comparing the online and on-campus

learners, online learners rated both functions in the information domain (*accurate*

information and *how things work*) and two functions in the integration domain (*major*

connect and *overall connect*) as more important and both functions in the referral

domain (*referral academic* and *referral non-academic*), one function from the

individuation domain (*know as individual*) and one function from the integration (*out of*

class connect) as less important than on-campus learners.

Results from the ANOVA for both online and on-campus learners demonstrated

that learners meaningfully discriminated among the 12 advising functions and their

relative importance. Of the 12 academic advising functions, online learners rated 10 of

the functions at the high end (four or higher on a six-point scale) of the importance scale

and two functions (*out-of-class connect* and *referral- non-academic*) in the more

moderate importance range, 3.61 and 3.80 respectively. In contrast, on-campus learners

rated all 12 functions at the high end of the importance scale. The on-campus results are

consistent with Smith and Allen (2006) whose study respondents, undergraduate

students at a doctoral institution, also rated all 12 functions as important.

The domains and functions that online learners rate as being more important are

consonant with research on adult learners. One of Knowle's (1980) assumptions

undergirding adult learning was that adult learners exhibited a preference for learning

that is task or problem-centered. All four of the functions rated as relatively more important to online learners suggest this orientation to their learning and education process. If an online learner's education is viewed as a task or problem to be solved, then having accurate information, knowing how things work, as well as being able to make the connection between their major and their life, career, and academic choices and how that knowledge helps them solve their "problem" would be viewed as critical.

Of the functions rated as less important, the two referral functions and *out-of-class connect* may be seen by online learners as functions that are available solely to learners on-campus and therefore not as important to them. Both referral functions reference campus resources specifically and given that many online learners do not have easy access to their physical campus, online learners may view them as inaccessible. Additionally, given the demographic characteristics of online learners and their personal contexts, it is possible that they already have access to or relationships with resources to assist them with the types of problems that a referral to an on-campus resource could assist with.

The fourth relatively low rated function was *know as individual*. This function also had the largest divide between online and on-campus learners. On-campus learners rated this function as the 4th most important function where online learners rated it their 9th most important function. One supposition for this finding may be that online learners have lower expectations for a personalized relationship with an adviser they may only meet electronically or, possibly, telephonically.

In the case of all four functions rated relatively lower by online learners, the standard deviations were fairly large ranging from 1.41 to 1.89 on a six-point scale. Standard deviations of this scale suggest that there was disagreement within the online learner group on the importance of these functions. For those whom these functions were not important, they ranked very low on the importance scale. However, for those for whom these functions were important, they were very important. This is critical information for practitioners as the mean ratings may indicate overall lower importance, the mean ratings may also be obscuring high levels of importance amongst some in the online learner cohort for these functions.

Sub question c of question 1 considered only online learners' ratings of the importance of the various academic advising functions. The regression also controlled for several other potentially confounding variables including institution, gender, age, new or continuing student, first-generation status, and class level to test if the importance ratings were uniquely associated with the learners' status as an online learner or some other learner or institutional characteristic controlled for in the testing.

The regression model was significant for all 12 functions of academic advising. Being an online learner was uniquely predictive of the importance ratings on eight of the functions when controlling for the other potentially confounding variables. For two of the functions, *accurate information and general education connect*, being an online learner predicted higher importance ratings. For six others, *out of class connect,* the referral domain (*referral academic* and *referral non-academic),* the individuation domain

(*know as individual* and *skill, abilities, and interests*), and *shared responsibility,* being an online learner predicted lower importance ratings.

Interestingly, when compared to the findings for question one, controlling for learner and institutional characteristics resulted in two of the functions in the integration domain, *overall connect* and *major connect*, and one function from the information domain, *how things work*, no longer being significantly more important for online learners than for on-campus learners. The regression added *gen ed connect* as more important for online learners and reaffirmed the higher importance ratings for *accurate information* for online learners as compared to on-campus learners. Finally, the regression affirmed the lesser importance for online learners of *out of class connect,* both referral functions, *know as individual*, and added both *skills, abilities, and interests,* and *shared responsibility* as functions that matter less to online learners than on-campus learners.

Accurate information was reaffirmed as a critically important function for online learners. It should also be noted that this function was also the most highly rated function in importance for all learners in the study. However, not only is receiving accurate information about degree requirements more important to online learners relative to on-campus learners but its importance rating is uniquely associated with being an online learner regardless of other demographic or institutional characteristics. It is very clear that for online learners, having accurate information about their degree requirements is truly and uniquely important. This finding accords with prior research by

Raphael (2006) and Axelson (2007) who found that academic advising that provided

clear and timely information about curriculum and graduation requirements were

amongst the most important student services online learners could be provided.

Raphael suggested that this need for accurate information is also likely connected with

online learners' propensity to be juggling a variety of roles as an older learner such as

family, full-time employee, and community member. Ross-Gordon (2011) noted that

adult learners, a population that the demographics of online learners in this study match

closely, seek "highly structured learning experiences that provide a clear roadmap of

teacher expectations" (p. 29). In a similar fashion, online learners seek for a highly

structured and clear roadmap from their adviser on curriculum and graduation

requirements.

General education connect is the other function found to be rated as more

important to online learners and uniquely associated with being an online learner.

General education connect assists learners in choosing among various general education

options that connect to their major, life, and career goals. Humphreys and Davenport

(2005) found through a series of student focus groups regarding liberal education and

general education requirements that learners often reported that general education

requirements "detract from a students' major, rather than enhance it" (p. 43). Given the

time constraints that online learners often face due to the multiple roles and pressures

they have, making a clear connection between the relevance of general education

requirements and education, life, and career goals would be very important to online

learners. Additionally, Wyatt (2011) found that general education courses, particularly those in math and science, are often challenging for older learners returning to education after a break. Advising that directs online learners to the right courses that help support their success is important.

Online learners rated as relatively less important both referral functions (*referral academic* and *referral non-academic*) as well as *out of class connect*. These results align with prior literature on what online learners have reported as the services they find less important to them (Axelson, 2007; Dare et al., 2005; Hirt, Cain, Bryant, & Williams, 2003; Lohsandt, 2005). Online learners have generally reported that services such as student clubs and organizations, personal mentoring, counseling, tutoring and study skills, and general social support services are less important to them than more focused services such as academic advising that informs them of required courses and curriculum, financial aid, registration and student records, and bookstore services. Hirt et al. suggested that these services are less important for many online learners because online learners enter the online arena simply expecting less from an institution in these areas believing they were trading access to these services for the flexibility of online learning. In contrast, Dare et al. suggested that online learners may be more interested in these services and may place higher value on them if they were more aware of those services. In the present study, the mean importance ratings for these functions were signficantly lower for online learners than on-campus learners and remained so even when controlling for demographic and institutional characteristics and were ranked

tenth, eleventh, and twelvth in importance. However, the standard deviations for all

three of these functions were larger than they were for the other functions ranging from

1.66 to 1.92 on a six-point scale. It would appear that there was significant

disagreement within the online learner group on the importance of these functions and

for those for whom these functions are important, it is essential that their adviser know

and make the appropriate referrals and connections for them.

Both functions in the individuation domain (*know as individual* and *skills,*

abilities, and interests) were signficantly less important for online learners even when

accounting for demographic and institutional characteristics. This is in line with Dare et

al.'s (2005) finding that online learners placed less importance on a sense of connection

with their academic adviser than did on-campus learners. Dare et al. found that across a

broad swath of institutional functions, other than with their instructor, online learners

reported lower levels of importance for sense of connection than did on-campus

learners and were generally more satisfied with the connections they did have. It may

be that, to some degree, that this is what online learners see as part of the package of

being an online learner: greater flexibility but less connection and individuation.

However, while there may be a signficant difference and lower mean scores for online

learners regarding the individuation domain, they do not rate these functions as

unimportant. The mean scores for these two functions were 5.01 for *skills, abilities, and*

interests and 4.80 for *know as individual.* Both of these scores remain in the important

range on a 6-point importance scale meaning that even with lower importance ratings

than on-campus learners, online learners still expect and desire to be known as

individuals and receive individuated advising that considers their skills, abilities, and

interests.

The last function rated as less important by online learners was *shared*

responsbility. While there is a statistical difference between online and on-campus

learners, there is little difference between mean scores, 4.86 for on-campus and 4.84

for online learners and only one ranking difference, seventh in importance for on-

campus learners and eighth for online learners with standard deviation scores within .16

points of each other. Regardless, this finding is surprising as a hallmark of many

descriptions of online and adult learners is their reported greater propensity for self-

direction (e.g., Garrison, 1997; Ross-Gordon, 2011; Rovai, Ponton, & Wighting, 2007), a

concept, in part, defined by individual responsibility for one's own learning. Perhaps if

online learners prepossess the inclination for responsibility for their own learning, it is

not as important to them to have an adviser encourage them to do so.

Question 2: Discussion

Are there differences in the advising experiences between online and on-campus learners

in how they:

   a) *How often they get advising, and;*

   b) *Where they get their information about classes to take?*

How often they get advising. The results for the chi-square analysis for frequency of advising demonstrated no significant difference between online and on-campus learners in their frequency of advising. Most learners in both groups, 75.2% and 78.3% online and on-campus respectively, obtain academic advising more than once per year. Relatively few learners in both groups were not advised or not being currently advised, 10.4% and 9.5% online and on-campus respectively. As access to quality academic advising was an issue referenced in some prior research on learner support for online learners (Axelson, 2007), seeing that the majority of online learners are accessing academic advisers regularly is a positive finding.

Where they get their information about classes to take. Regarding the source of information for learners on what classes to take to meet their requirements, both online and on-campus learners accessed advisers or advising offices at their institution or used advising tools (e.g., websites, catalogs, advising guides) at the same rate. However, there was a significant difference in the utilization of informal social networks such as family or friends between online and on-campus learners. On-campus learners were roughly three times more likely to utilize informal social networks as their primary source of information on what classes to take than were online learners. On-campus learners, in general, have far more interactions with peers face-to-face than online learners (Hirt et al., 2003). Dare, et al. (2005) also found that online learners found those personal connections with other learners that might facilitate the interpersonal transfer of knowledge of what classes to take to be of lesser importance than on-

campus learners. In a review of the demographics of the sample, online learners in the

study sample were also significantly more likely than on-campus learners to be first-

generation college students meaning that they were less likely to have family members

who could assist them in choosing what courses to take.

Question 3: Discussion

For online learners, what relationship, if any, exists between advising learning outcomes

and online learners' advising experiences, that is,

    a) *Whether and how often they get advising;*

    b) *Where they get their information about classes to take, and;*

    c) *How satisfied they are with the advising they receive?*

        Whether and how often they get advising. The ANCOVA results for this question

clearly demonstrate that frequency of advising positively influences learners' ratings of

the learning they experience as an outcome of academic advising even when controlling

variables that are known or thought to influence the learning learners obtain from their

relationship with an adviser. Those learners who were advised more than once per year

consistently reported greater levels of advising learning than those who were advised

only once per year.

        When compared to those who were not advised or not currently being advised,

online learners who were advised more than once per year reported greater levels of

learning on seven of the eight advising learning outcomes. The one variant was for

supports mandatory advising. On this outcome, there was no difference between online

learners advised more than once per year and online learners who were not advised or were not currently being advised. Those two groups reported greater levels of agreement with mandatory advising than did those who were advised once per year. It is perhaps unsurprising that those online learners who obtain advising more than once per year value their experience and learning from advising and see the value in mandating it for all online learners. Online learners who were not advised or not currently being advised may also have seen that same value, not from having experienced it, but from what they saw as missing from their educational experience and perhaps desired that extra incentive that mandating academic advising would provide.

Examining the standard deviations for the eight learning outcomes also reveals that those online learners who are advised more than once per year were far more in agreement on their scores with smaller standard deviations than the online learners who were not advised or advised only once per year. Smith and Allen (2014) discovered similar findings in their study of these same learning outcomes with nine different institutions and over 22,000 participants. They suggest that perhaps some of these learners who are less frequently advised do not believe they need advising or "may overestimate their learning" (p. 59) on these learning outcomes.

While all of the reported scores for online learners advised more than once per year were at the high end of the scale (over four on a six-point scale), the ratings for "I have had at least one relationship with a faculty or staff member at *name of institution*

that has had a significant and positive impact on me" were the lowest. The unadjusted

mean score for this outcome was 4.26, the lowest of the ratings and with a sizable

standard deviation of 1.63, the highest of the standard deviations observed for this

group. The question does not specifically ask if the relationship is with the learners'

academic advisers. However, given that the adviser may be the only significant and

ongoing relationship the online learner has with an institution (Curry el al., 1998), it

appears that for some learners, even when they are more frequently advised they do

not necessarily agree that they have had a significant and positive relationship with a

faculty or staff member. What does appear clear is that like Smith and Allen (2014)

findings that demonstrated linkages between frequency of academic advising and

higher ratings from learners on the advising outcomes, online learners also report

higher ratings on advising outcomes when they are advised more often.

Where they get their information about classes to take. The results of the

ANCOVAs on source of advising information on which classes to take was unequivocal

on all eight learning outcomes. Online learners who received their primary advising from

an adviser or advising office reported more learning and more of the types of learning

that we expect from a relationship with an academic adviser than those who obtained

their information about what classes to take from advising tools or from informal social

networks.

Online learners who used advising tools, official advising materials or websites,

reported lower agreement scores across all eight outcomes than those learners who

saw advisers or advising offices. While other researchers have discussed the need to provide online advising tools to online learners in order to facilitate the "any time" access to information that matches in many ways that asynchronous and time-and-place flexible learning environment that many online learners choose online learning for (Hirt et al., 2003; Lohsandt, 2005; Steele & Thurmond, 2009) it appears that while, in many cases, advising tools are preferable to informal social networks that neither option is as effective in conveying the types and amounts of learning as advising from an adviser or advising office.

The finding that online learners who received most of their advising on what required classes to take from an adviser or an advising office reporting more learning and more of the types of learning we would expect from an advising encounter is consistent with Smith & Allen's (2014) findings. They also found that learners who utilized advisers or advising offices reported significantly higher scores on all eight learning outcomes as compared to those who used advising tools or informal social networks.

Online learners are roughly three times less likely than on-campus learners to use informal social networks as their primary source of information on what required courses to take and a very small number overall (*n* = 18) of online learners use informal social networks as their primary source of advising information on what required courses to take. However, differences were noted between learners who used advising tools and informal social networks on three outcomes: *knows requirements,*

understands connections, and *has significant relationship.* It appears from these findings that informal social networks do not necessarily provide either the types or clarity of information that permit online learners to know what classes they need to fulfill their requirements or understand the connections between their academic choices and their career and life goals. While formal advising by an academic adviser or advising office results in more reported learning, advising tools resulted in more reported learning than did informal social networks on these two cognitive outcomes. Least surprisingly, learners who use informal social networks for their primary source of information on classes to take to achieve their goals also report that they are significantly less likely than online learners using advisers or advising offices or advising tools to have developed a significant relationship with a faculty or staff member who has made a positive difference for them. What is unclear is why these online learners choose to forego having a relationship with an adviser who could help them gain the types of learning and experiences that help with retention and graduation. It may be that these are disgruntled learners and have made the choice to try and navigate the academic structure of the institution on their own.

How satisfied they are with the advising they receive. Satisfaction played a critical role predicting higher levels of agreement from online learners across all eight learning outcomes. In the multiple simultaneous regression models for each outcome, even when controlling for institutional context, gender, age, new or continuing student status, first-generation status, class level, and GPA, the online learners' reported level of

satisfaction positively influenced and predicted higher levels of agreement across the eight learning outcomes.

I utilized Cohen's (1988) recommendation transforming R^2 statistics into Cohen's f^2 to determine and interpret effect sizes for multiple regressions. Cohen's f^2 statistics varied from a low of .05 to a high of .49. The regressions for *supports mandatory advising* (f^2 = .05) and *values adviser/advisee relationship* (f^2 = .06) demonstrated relatively small effect sizes. The regressions for *has educational plan* (f^2 = .19), *understands connections* (f^2 = .19), *has significant relationship* (f^2 = .25), and *knows requirements* (f^2 = .27) demonstrated medium effect sizes., *Understands how things work* (f^2 = .33), and *knows resources* (f^2 = .49) both demonstrated larger effect sizes. Again, all eight learning outcomes had at least small effect sizes with six of the eight demonstrating medium or large effect sizes.

When examining standardized betas (β) for each of the regressions, the β for satisfaction on seven of the eight learning outcomes revealed that satisfaction was more predictive of higher scores from online learners than any other covariate in the regression model. *Supports mandatory advising* was the only outcome where a covariate, community college (β = -.16), was more predictive of online learner scores than was satisfaction (β = .12).

Another finding of note is the impact that institutional context had on the learning reported by online learners. Hemwall and Trachte (2003) have suggested that small colleges produce more advising learning than their larger counterparts. Public

University 2, a Master's- small programs institution, was used as the reference

institution for this regression. When comparing Public University 1, a large research

university, to Public University 2, the learners at the large institution report greater

levels of academic advising knowledge on three of the cognitive learning outcomes

(*knows requirements, knows resources, understands how things work*) and lower levels

on two cognitive (*understands connections* and *has educational plan*) and one affective

(*has significant relationship*) outcomes. The three outcomes where Public University 1

learners reported higher scores are outcomes from the information domain. The two

cognitive outcomes Public University 1 online learners scored lower were the two

outcomes connected to the integration domain. When viewed from the perspective of

what constitutes prescriptive versus developmental advising (Crookston, 1972;

O'Banion, 1972), these results suggest that, when compared to Public University 2, the

learning that online learners achieve from academic advising at the larger institution

may be more focused on the prescriptive elements of academic advising rather than

developmental advising when compared to the smaller institution.

When comparing Community College (large, public) to Public University 2,

community college online learners report slightly more learning on *knows resources*,

and lower scores for the outcomes *knows requirements, understands connections,*

values adviser-advisee relationship, and *supports mandatory advising.* Again,

referencing Hemwall and Trachte's (2003) suggestion that smaller institutions produce

more advising learning, this comparison of large community college to a small public university also provides some evidence of that assertion.

Age also played a substantial role in understanding advising learning. Older online learners scored their advising learning higher on three of the cognitive functions (*knows resources, understands how things work,* and *understand connections*) and all three affective outcomes of advising. As Knowles (1980) and Grant (2010) posited, older learners are practical, purpose-oriented, and need to see the relevancy of their coursework and education broadly. It may be that the learning that older learners receive through advising provides for these needs and results in their valuing their advising relationship more than younger learners.

Class level also was significant in creating more advising learning, especially for the affective outcomes. The further along in their undergraduate education online learners went, the more they valued the relationship they had with their adviser, the more they supported mandatory advising, and the more they reported having a significant relationship with a staff or faculty member at their institution. Upper-class online learners were also more likely to agree that they had a plan to achieve their educational goals. As it is likely that upper-class learners have had more opportunity to meet with and interact with the adviser, the length of an advising relationship may increase the likelihood that the learner values that advising relationship and sees the value in other learners having similar relationships with an adviser.

Clearly, online learners' satisfaction with the advising they receive plays a critical role in learner's reporting learning and attitudes that contribute to their success at the institution. In almost every case, satisfaction played the largest role in predicting what learners reported "knowing, do[ing], and valu[ing] or appreciat[ing] as a result of the academic advising experience" (Smith & Allen, 2014, p. 51). As Astin (1993) concluded, "it is difficult to argue that student satisfaction can be legitimately subordinated to any other education outcome" (p. 273). Astin and Tinto (1993) also suggest that learner satisfaction with academic services may be linked to educational outcomes. This study provides further evidence and support of this link between satisfaction and educational outcomes.

What is surprising, however, is the comparatively small impact that satisfaction has on online learners' reported support for mandatory advising as well as how online learners value the adviser/advisee relationship. It is unclear why increased satisfaction with the advising they receive from their adviser would not have a greater impact on these two affective outcomes. It may be perhaps that satisfied online learners take for granted that they have a positive and effective relationship with their adviser.

Conversely, online learners who are more satisfied report that they know the requirements they need to fulfill in order to graduate, they know where to access help at their institution when they need it, and they understand how things work at their institution. Given the high level of importance that online learners place on accurate and timely information, it is unsurprising that online learners who report higher levels of

satisfaction with their advising also report higher scores on learning outcomes that

demonstrate concrete knowledge on requirements, resources, and on how to navigate

their institution. Perhaps for these learners, while they report valuing a relationship with

an adviser, having access to accurate information on these topics is simply of greater

importance to them.

Implications for Practice and Potential Future Research

The purpose of this study was to begin addressing the gap in current research on

the advising learning, experiences, and attitudes of online learners. We know from prior

research that some student services, in particular, academic advising, are important for

online learners (Dare et al., 2005; Hirt, Cain, Bryant, & Williams, 2003; Lohsandt, 2005).

Prior research also suggests that academic advising can influence the retention and

academic performance levels of all learners, including online learners (Cain & Lockee,

2002; Watson, 1994). However, while much as been written on the need to provide

academic advising and other student services to online learners, there has been little

empirical research conducted, especially focusing on reports from online learners

themselves regarding their experiences. This current study was undertaken to address

that gap by collecting empirical evidence from online learners regarding their

experiences and their subsequent attitudes and learning as a result of having or not

having contact with academic advising at their institution.

A great deal of the literature describing how best to provide academic services to

online learners use the framework and theories of adult learning to guide their

recommendations (e.g., Cercone, 2008; Crawley, 2012). In many ways, the demographic

characteristics of online learners match the characteristics of adult learners. However,

based on this study, even with their similarities, online learners still differ in significant

ways in how they report the importance of various advising functions and learning from

academic advising when compared to adult learners generally. Even when controlling

for age, I found significant differences on how online learners rated the importance of

eight of the twelve academic advising functions measured in this study. To best serve

online learners, understanding how this population meaningfully differs from not just

on-campus learners but adult learners generally could improve the effective provision of

student services to online learners. While this study provides some insight into those

differences, further research would be useful focusing specifically on how online

learners may differ from adult learners as much of the extant literature conflates online

learning with adult learning.

Clearly, and above all else, the provision of accurate information on what classes

to take to meet their degree requirements is absolutely critical for all learners and this

has been validated through prior research (e.g., Allen & Smith, 2006; Gravel, 2012). As

important as accurate information is for all learners, based on the responses from online

learners in this study, it is even more important for online learners to receive accurate

information from their advisers. The most likely reason for this difference is connected

to the life circumstances of the average online learner. Based on this study and other

research we know that online learners are generally older than most undergraduate

learners. They are also more likely to be married, more likely to have dependents, and

to be employed full-time (Radford, 2011). In addition, online learners are more likely to

have prior-college credit hours (Diaz & Cartnal, 2002; 2006). Given these life

circumstances, online learners often have less time available to them to manage their

classwork and other academic requirements. Not receiving accurate information could

very possibly delay or even derail learners' progress towards a college degree.

Online learners also need academic advising that helps them integrate and make

connections between their classes, majors, degree choice, and their academic, career,

and life goals. Adult learners desire to be problem-focused in their learning and they

want to see their learning organized around their personal goals and lived experience

(Cercone, 2008; Knowles, 1980). Knowles stated

> Adult learners… demand that the relevance and application of ideas be
>
> demonstrated and tested against their own accumulated experience and
>
> wisdom. For these adults, learning methods that combine work and study,
>
> theory and practice, provide a more familiar and therefore more productive
>
> arena for learning. (p. 6)

Given that the integration functions of quality academic advising were more important

to online learners than for on-campus learners, advising that helps online learners

integrate new knowledge in ways that demonstrate its relevancy and connects to

learners' existing knowledge, life circumstances, and goals is critical.

The two functions that connect online learners to non-academic resources (*out of class connect* and *referral non-academic*) were scored as being less important for online learners when compared with on-campus learners even when controlling for other individual or institutional characteristics. Additionally, the mean scores on those functions (3.61 and 3.80, respectively) and their ranking as the least important functions of academic advising indicate that out-of-class activities and campus resources that address nonacademic problems are of far less importance to many online learners. However, the standard deviations for these two functions were also the highest of all the functions scored (1.89 and 1.92 respectively). There is a significant amount of disagreement within the online learner group on the importance of these functions. This finding is bolstered by both Dare et al. (2005) and Axelson's (2007) research who found that while most online learners were not interested in services such as clubs and organizations, mentoring, student government, and personal counseling, there was a sizable minority of online learners in their studies that would use those services, if provided. What is less clear are what the characteristics are of those online learners who would be interested in those services so that academic advisers could make those connections and referrals. Better understanding what characteristics of the minority of online learners who would be interested in out-of-class activities and nonacademic resources is an opportunity for future study.

What is unequivocal is that meeting with advisers rather than using advising tools or informal social networks and meeting with them frequently (more than once a

year) are associated with increases in the reporting of both the amount and the types of

advising learning we expect to see in an advising relationship. Across all eight learning

outcomes, online learners reported higher scores when they were advised more

frequently and when they met with advisers rather than using other resources for

information on what classes to take to graduate. This is consistent with the research

conducted by Smith and Allen (2014) who reported similar findings for a large group of

learners from multiple institutions. Based on a review of both adjusted and unadjusted

mean scores on reports from learners on learning outcomes from Smith and Allen's

research and the online learners in this study, online learners report even greater levels

of reported learning consistent with the learning we see in quality advising relationships

on most of the learning outcomes.

One implication from this finding is that it appears that online learners will

benefit from a regular and productive meeting schedule with an academic adviser. For

those institutions who do not currently mandate academic advising, the findings from

this and other research would suggest that those institutions should strongly consider

requiring regular and consistent academic advising for all online learners.

Finally, satisfaction matters. Across all eight outcomes, online learners who

reported being more satisfied with the advising they received also reported higher levels

of learning. Except for one outcome (*supports mandatory advising*), greater satisfaction

was also the most predictive factor in determining increased levels of reported learning

even when considering a variety of other factors (institution, gender, age, new or

continuing student, first generation, class level, and GPA). While focusing on the critical

learning that happens within the advising relationship, advisers should also be

thoughtful of how the online learner is experiencing the interaction. Online learners

who are satisfied with their experience will also experience more of the critical learning

that the adviser is working on developing in collaboration with the online learner.

Prior research suggests that advising quality is related to satisfaction and

institutional commitment (Corts, Lounsbury, Saudargas, & Tatum, 2000; Vianden &

Barlow, 2015; Waggenspack & Hensley, 1992). Providing academic advisers consistent

and effective pre-service training as well as continued professional development can

improve advising quality. Wiseman and Messitt (2010) reported that advisers who

received advising-specific training were able to provide more in-depth advising and

reported a better understanding of the full-range of tools available to them to provide

quality academic advising. Academic advising is a complex and complicated role

straddling both the need to clearly articulate a complex set of institutional regulations,

requirements, and norms while providing a supportive environment for learners to

articulate their needs, concerns, and goals so that the adviser can provide the

individualized and personalized advising that increase learners' satisfaction with the

advising experience. Training that provides both types of skills is important for

increasing both the quality of advising as well as learners' satisfaction with the advising

process.

Understanding the role that satisfaction has on advising learning is an area where more research would be of benefit. What impact does satisfaction have on frequency of advising or source of advising information? Do satisfied online learners access advising more or less often than learners who are not satisfied with the advising they receive? Do online learners choose to receive their information on what classes to take from another source other than an adviser or advising office? Better understanding the role of satisfaction on the behaviors, attitudes, and learning of online learners could be useful in customizing adviser and institutional outreach to online learners.

Since the time these data were collected, there have been several important changes in online learning including greater acceptance of online learning, the explosion of mobile "smart" devices, the increased use of hybrid and blended courses, and institutions offering online learning that may shape how institutions deliver online learning and academic advising for online learners. Allen and Seaman (2015) reported an increase in both faculty and academic leadership acceptance of online learning as an equivalent to face-to-face learning. Learners are also now increasingly researching academic programs as well as accessing learning management systems (LMS) through mobile devices (mobile phones and tablets) than ever before (Aslanian & Clinefelter, 2017; Han & Shin, 2016; Shin & Kang, 2015). This increased use of mobile devices demands that institutions optimize their websites as well as their LMS for mobile access and small screens. Academic advisers would also be well served by ensuring the ways in which they are accessible to learners are accessible via mobile devices.

While the proportions of learners taking some of their courses online or courses exclusively online have steadily increased over the past several years (Seaman, Allen, & Seaman, 2018), the proportions being served by private, for-profit institutions have declined since 2012 and have increased during the same time period at public institutions. In addition, learners enrolled in purely online programs is becoming increasingly localized. In 2012, 50.3% of learners enrolled in purely online programs were living in the same state in which the enrolling institution was located. In 2016, that proportion had increased to 56.1%. When considering purely online learners enrolled at public institutions, that percentage increases to 84.2%. Given that "distance can be local" (p. 16), institutions may want to consider if learners located in close proximity to the physical campus could or should be served differently than those learners located at greater distances from the physical campus.

Technological tools for advising learners and for learner self-advising have increased dramatically over the past several years. In addition, the tools available to advisers to communicate with learners in a variety of formats online have also increased (Gaines, 2014; Kalamkarian & Karp, 2017; Pitcher & Paso, 2018). Social media is one channel that has been suggested as a communication method to utilize in an attempt to "meet students where they are" (Junco, Mastrodicasa, Aguiar, Longnecker, & Rokkum, 2016, p. 61). However, several researchers found that adviser use of social media was not viewed positively by learners (Gaines, 2014; Junco et al., 2016). Gaines reported that "participants indicated some rather strong negative feedback about the use of social

media as a vehicle for transmitting information to students" (p. 47). Interestingly, researchers studying learner preferences in providing advising through electronic means reported that learners express a strong preference for email communications. As new technology tools to communicate with learners continue to be developed and proliferate, Fries-Britt's (2008) advise to collaborate and learn along with learners and to take their lead in what technologies best suit learners' needs seems apropos.

Another more recent innovation in technological tools include systems such as iPASS (Integrated Planning and Advising for Student Success), an analytics-driven data system that integrates both institutional academic success data and individual learner data to provide customized feedback, communication, and support for learners in an online system (Kalamkarian & Karp, 2017). These systems also provide communication tools for advisers and institutions to communicate with learners and for a centralized repository of advising notes on interactions with learners. Other systems such as the Educational Advisory Board's Student Success Collaborative utilizes extremely large data sets at both the single-institution level as well as from the multiple institutions that make up the collaborative to help advisers and learners plan future coursework through graduation as well as predict the learner's chances of success within a particular program based on the learner's prior academic history and data collected on other learners' with similar academic history (Portland State University, n.d.). Some have argued that the use of these data analytics tools are helpful to both advisers and learners by providing more opportunities to learners to self-advise and reducing the

load on advisers making them more efficient (Gaines, 2014; Kalamkarian & Karp, 2017).

While learners did report that they found the technological tools helpful and enhanced

their interaction with their advisers, they also reported skepticism regarding the ability

of technology to help them make meaning of their college experiences as well as not

being able to replicate the feedback and individualized instruction that learner-adviser

interactions provided. The only area learners reported feeling technology could supplant

advisers was in answering simple procedural questions as well as course registration

functions. As the *Inventory of Academic Advising Functions-Student Version* is revised for

future use, a consideration would be review and modify the advising tools question of

the survey to better reflect the changes in the types and reach of current technology in

advising tools.

Limitations

While this study was multi-institutional including three institutions of different

sizes and missions as well as one of the largest online-only group of participants, the

sample of online learners still numbered less than 1,000. This smaller sample size as

compared to the sample size of the on-campus learners may limit generalizability.

Additionally, all the study institutions were public institutions. As the private, for-profit

higher education institutions have historically been seen as a significant provider of fully

online degree programs, their omission from this study may also limit its broad

applicability to the overall population of online learners.

While some data used in the study was reported by the institution from their

student information systems, the remainder of the data on advising learning,

importance, and satisfaction are self-reports from learners who participated in the

study. There may be some bias in these data as the learners who self-selected may not

fully represent the diversity of thought and opinion present in their populations. Also,

self-report data on learning may be skewed as learners may not be accurately reporting

advising frequency and source of advising information, as examples.

While the survey instrument or data provided by the institution provided

information on either where the learner was enrolled for their primary campus (Public

University 2 and Community College) or where the learner took the majority of their

courses (Public University 1), I cannot say that the learners included in the online group

took all of their courses solely online nor that they were completely excluded from

accessing any academic advising face-to-face or on-campus.

While the statistical methods used were generally robust and met most of the

required assumptions of the tests used, there were some ANCOVA tests that did not

fully meet the assumption that there were homogeneity of slopes. Further testing

demonstrated that the violations were relatively minor and, given the large sample size

and use of a post-hoc correction, were likely inconsequential, nonetheless the results

should be used with some caution as this violation may result in Type I errors.

Finally, the underlying data for this study came from surveys administered in

2011. Given the rapid rate of change in the numbers of learners opting to take courses

and degrees online and the likely changing demographics of that cohort of learners, I

suspect that research has not fully kept up. To address this issue, the study should be

replicated to determine if these data and findings remain accurate or if those

demographic changes have resulted in changes in the advising attitudes, experiences,

and learning of online learners.

Conclusion

This study explored the advising attitudes, experiences, and learning of online

learners. In particular, it examined the differences between online and on-campus

learners in how they rate the importance of twelve academic advising functions that

represent quality academic advising (Allen & Smith, 2006), determined if those

importance ratings were uniquely associated with being an online learner or some other

factor or characteristic, determined what if any differences existing between online and

on-campus learners in where they primarily obtained their information on required

classes to take and the frequency with which they were advised, and finally looked at

the role frequency of advising, source of advising information, and satisfaction had on

reported learning.

The findings suggest that online learners differ meaningfully from on-campus

learners and express different attitudes and judgements about what types of advising

experiences are important for them. Also, while online learners share several

meaningful characteristics with adult learners, they are also different from them in ways

that deserve further study in order to provide more individualized advising. Finally,

there is a clear connection between the level of reported learning and the source and

frequency of advising learning and the satisfaction online learners express regarding

their advising experiences.

This study also extends the current research on academic advising for online

learners in that it explicates what kinds of advising are more important for online

learners. While prior research has demonstrated that online learners report that

academic advising is important to them, the research presented here demonstrates the

kinds of advising that online learners find most important. While advisers still need to be

prepared to offer a comprehensive set of advising functions to all online learners,

knowing what may likely have the greatest impact can provide the insight needed to

improve advising practice.

References

Abdi, H. H. (2007). The Bonferonni and Šidák Corrections for Multiple Comparisons.

　　Encyclopedia of Measurement and Statistics., *1*, 1–9.

Allen, I. E., & Seaman, J. (2006). *Making the grade: Online education in the United*

　　States, 2006. Needham, MA: Babson Survey Research Group.

Allen, I. E., & Seaman, J. (2011). *Going the distance: Online education in the United*

　　States, 2011. Needham, MA: Babson Survey Research Group.

Allen, I. E., & Seaman, J. (2015). *Grade level: Tracking online education in the United*

　　States. Needham, MA. Babson Survey Research Group.

Allen, I. E., & Seaman, J. (2017). *Digital learning compass: Distance education enrollment*

　　report 2017. Needham, MA: Babson Survey Research Group.

Allen, J. M., & Smith, C. L. (2008a). Faculty and student perspectives on advising:

　　Implications for student dissatisfaction. *Journal of College Student Development*,

　　49(6), 609–624.

Allen, J. M., & Smith, C. L. (2008b). Importance of, responsibility for, and satisfaction

　　with academic advising: A faculty perspective. *Journal of College Student*

　　Development, *49*(5), 397–411.

Aslanian, C. (2001). You're never too old. *Community College Journal* 71, no 5: 56-58.

Aslanian, C. B., & Clinefelter, D. L. (2017). *Online college students 2017: Comprehensive*

　　data on demands and preferences. Louisville, KY: The Learning House, Inc.

Astin, A. W. (1993). *What matters in college? Four critical years revisited* (1st ed.). San

Francisco: San Francisco : Jossey-Bass.

Axelson, S. L. (2007). *The use and value of student support services: A survey of*

undergraduate students in online classes. (Doctoral dissertation). University of

Wyoming, Laramie, WY.

Barr, R. B., & Tagg, J. (1995). From teaching to learning: A new paradigm for

undergraduate education. *Change*, *27*(6), 13–25.

Beitz, N. C. (1987). Academic advisement for distance education students. *Journal of*

Education for Library and Information Science, *27*(4), 280–287.

Biesta, G. (2009). Good education in the age of measurement: On the need to reconnect

with the question of purpose in education. *Educational Assessment, Evaluation and*

Accountability, 21(1), 33-46.

Blumenstyk, G. (2011, April 12). Accreditor's probe of questionable recruiting practices

continues at 3 for-profit colleges. *The Chronicle of Higher Education*. Retrieved

from http://chronicle.com/

Boston, W. E., Ice, P., & Gibson, A. M. (2011). Comprehensive assessment of student

retention in online learning environments. *Online Journal of Distance Learning*

Administration. Retrieved from

http://www.westga.edu/~distance/ojdla/spring141/boston_ice_gibson141.html

Bower, B. L., & Hardy, K. P. (2004). *From distance education to e-learning: Lessons along*

the way. San Francisco: Jossey-Bass.

Braxton, J., Sullivan, A., & Johnson, R. (1997). Appraising Tinto's theory of college

    student departure. In J. C. Smart (Ed.), *Higher education: Handbook of theory and*

    research (Vol. 12, pp. 107–158). New York, NY: Agathon.

Brindley, J. E. (2014). Learner support in online distance education: essential and

    evolving. In O. Z. Richter & T. Anderson. *Online Distance Education. Towards a*

    Research Agenda, (pp. 287–310). doi: 10.15215/aupress/9781927356623.01

Brown, B. L. (2017). *Higher education distance advising in the 21st century: Distance*

    learning students' and advisors' perceptions. (Doctoral Dissertation). Retrieved

    from https://digitalcommons.odu.edu/stemps_etds/28

Bush, N. (1969). The student and his professor: Colonial times to twentieth century. *The*

    Journal of Higher Education, *40*(8), 593–609.

Cain, D. L., & Lockee, B. (2002). Student support services at a distance: Are institutions

    meeting the needs of distance learners? Retrieved from ERIC Database. (ED379553)

Carnevale, A. P., Smith, N., & Strohl, J. (2010). *Help wanted: Projections of jobs and*

    education requirements through 2018. Washington D.C.: Georgetown University

    Center on Education and the Workforce.

Carr, S. (2000, February 11). As distance education comes of age, the challenge is

    keeping the students. *The Chronicle of Higher Education*. Retrieved from

    http://www.chronicle.com

Cercone, K. (2008). Characteristics of adult learners with implications for online learning

    design. *AACE Journal*, *16*(2), 137–157.

Clay, M. N., Rowland, S., & Packard, A. (2008). Improving undergraduate online

retention through gated advisement and redundant communication. *Journal of*

College Student Retention, *10*(1), 93–102. https://doi.org/10.2190/CS.10.1.g

Cohen, J. D. (1988). *Statistical power for the behavioral sciences* (2nd ed.). Hillsdale, NJ:

Lawrence Erlbaum Associates.

Corts, D., Lounsbury, J. W., Saudargas, R. A., & Tatum, H. E. (2000). Assessing

undergraduate satisfaction with an academic department: A method and case

study. *College Student Journal*, *34*(3).

Crawley, A. (2012). *Supporting online students: A rational guide to planning,*

implementing, and evaluating services. San Francisco: Jossey-Bass.

Crookston, B. B. (1972). A developmental view of academic advising as teaching. *Journal*

of College Student Personnel, *13*, 12–17.

Curry, R. F. (2003). Academic advising in distance education degree programs. In M. G.

Moore & W. G. Anderson (Eds.), *Handbook of distance education* (pp. 181–192).

Mahwah, NJ: Lawrence Erlbaum.

Curry, R. F. (2013). Academic advising in degree programs. In M. G. Moore (Ed.),

Handbook of distance education (3rd ed., pp. 201–215). New York: Routledge.

Curry, R. F., Baldwin, R. G., & Sharpe, M. S. (1998). Academic advising in baccalaureate

distance education programs. *American Journal of Distance Education*, *12*(3), 42–

52.

Dabbagh, N. (2007). The online learner: Characteristics and pedagogical implications.

Contemporary Issues in Technology and Teacher Education. [Online serial], 7(3).

Retrieved from http://www.citejournal.org.proxy.lib.pdx.edu/volume-7/issue-3-

07/general/the-online-learner-characteristics-and-pedagogical-implications

Dare, L. A., Zapata, L. P., & Thomas, A. G. (2005). Assessing the needs of distance

learners: A student affairs perspective. *New Directions for Student Services*,

112(Winter), 39–54.

Diaz, D. (2002). Online drop rates revisited. *The Technology Source*. Retrieved from

http://ts.mivu.org/default.asp?show=article&id=1034

Diaz, D., & Cartnal, R. (1999). Students' learning styles in two classes: Online distance

learning and equivalent on-campus. *College Teaching*, *47*(4), 130–135.

https://doi.org/10.1080/87567559909595802

Diaz, D., & Cartnal, R. (2006). Term length as an indicator of attrition in online learning.

Innovate: Journal of Online Education. Retrieved from

http://www.innovateonline.info/index/php?view:article&id=196

Dirr, P. J. (1999). *Putting principles into practice: Promoting effective support services for

student in distance learning programs: A report on the findings of a survey*. Public

Service Telecommunications Corporation.

Dunn, S. (2005). A place of transition: Directors' experiences of providing counseling and

advising to distance students. *Journal of Distance Education*, *20*(2), 40–57.

Epstein, J. (2010). For-profits battle on many fronts. *Inside Higher Ed*. Retrieved from

http://www.insidehighered.com/news/2010/09/29/forprofit

Field, K. (2010, August 4). Lawmakers focus ire on accreditors for abuses at for-profit

colleges. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com

Field, K. (2011, March 10). At a Senate hearing, tough questions for a fast-growing for-

profit's accreditor. *The Chronicle of Higher Education*. Retrieved from

http://chronicle.com

Fries-Britt, S. (2008). Advising though a wave of change. *NACADA Journal*, *28*(1), 3–7.

https://doi.org/10.12930/0271-9517-28.1.3

Frost, S. H. (1991). *Academic advising for student success: A system of shared

responsibility*. Washington, D.C.: School of Education and Human Development, the

George Washington University.

Frost, S. H. (2000). Historical and philosophical foundations for academic advising. In V.

N. Gordon & W. R. Habley (Eds.), *Academic Advising: A Comprehensive Handbook*

(pp. 3–17). San Francisco, CA: Jossey-Bass.

Gaines, T. (2014). Technology and academic advising: Student usage and preferences.

NACADA Journal, *34*(1), 43–49. https://doi.org/10.12930/NACADA-13-011

Garrison, D. R. (1985). Three generations of technological innovation in distance

education. *Distance Education*, *6*, 235–241.

Garrison, D. R. (1993). Quality and access in distance education: Theoretical

considerations. In D. Keegan (Ed.), *Theoretical Principles of Distance Education* (pp.

9–21). Routledge: London.

Garrison, D. R. (1997). Self-directed learning: Towards a comprehensive model. *Adult*

Education Quarterly, *48*(18), 18–33. https://doi.org/10.1177/074171369704800103

Garrison, D. R. (2000). Theoretical challenges for distance education in the 21st century: A shift from structural to transactional issues. *International Review of Research in Open and Distance Learning*, *1*(1), 1–17.

Garrison, D. R. (2011). *E-Learning in the 21st century: A framework for research and practice*. New York: Routledge.

Grant, M. R. (2010). Application of adult learning theory in distance learning. In W. Ritke-Jones (Ed.), *Virtual Environments for Corporate Education: Employee Learning and Solutions* (pp. 14–35). Hershey, PA: IGI Global. https://doi.org/10.4018/978-1-61520-619-3.ch002

Gravel, C. A. (2012). Student-advisor interaction in undergraduate online degree programs: A factor in student retention. *NACADA Journal*, *32*(2), 56–67.

Guri-Rosenblit, S. (2005). "Distance education" and "e-learning": Not the same thing. *Higher Education*, *49*(4), 467–493. https://doi.org/10.1007/s10734-004-0040-0

Guri-Rosenblit, S. (2009). Distance education in the digital age: Common misconceptions and challenging tasks. *Journal of Distance Education*, *23*(2), 105–122.

Guri-Rosenblit, S., & Gros, B. (2011). E-Learning: Confusing terminology, research gaps and inherent challenges. *The Journal of Distance Education*, *25*(1), 1–20.

Habley, W. R. (2000). Current practices in academic advising. In V. N. Gordon & W. R. Habley (Eds.), *Academic Advising: A Comprehensive Handbook* (pp. 35–43). San Francisco, CA: Jossey-Bass.

Hale, D. M. (2016). *An examination of academic advising experiences of undergraduate*

students enrolled in face-to-face and online courses when considering gender,

ethnicity, first generation status and Pell grant status (Order No. 10587593).

Available from ProQuest Dissertations & Theses Global. (1886473852). Retrieved

from

http://stats.lib.pdx.edu/proxy.php?url=http://search.proquest.com.proxy.lib.pdx.e

du/docview/1886473852?accountid=13265

Han, I., & Shin, W. S. (2016). The use of a mobile learning management system and

academic achievement of online students. *Computers and Education*, *102*, 79–89.

https://doi.org/10.1016/j.compedu.2016.07.003

Haugsbakk, G., & Nordkvelle, Y. (2007) The rhetoric of ICT and the new language of

learning: A critical analysis of the use of ICT in the curricular field. *European*

Educational Research Journal, 6(1), 1-12. doi: 10.2304/eerj.2007.6.1.1

Hemwall, M. K., & Trachte, K. C. (1999). Learning at the core: Toward a new

understanding of academic advising. *NACADA Journal*, *19*(1), 5-11.

Hemwall, M. K., & Trachte, K. C. (2003). *Advising and learning: Academic advising from*

the perspective of small colleges and universities. Manhattan, Kansas: NACADA

(National Academic Advising Association).

Hemwall, M. K., & Trachte, K. C. (2005). Academic advising as learning: 10 organizing

principles. *NACADA Journal*, *25*(2), 74–83.

Hirt, J. B., Cain, D., Bryant, B., & Williams, E. (2003). Cyberservices: What's important

and how are we doing? *NASPA Journal*, *40*(2).

Holmberg, B. (1977). *Distance education: A survey and bibliography*. London: Kogan

Page.

Hrutka, M. E. (2001). Student services for distance learners: While some things change,

some things stay the same. *NetResults*. NASPA. Retrieved from

http://www.naspa.org/netresults/article.cfm?ID=261

Hsu, J., & Hamilton, K. (2010). Facilitating adult learner persistence through innovative

scheduling and teaching methods. *International Journal of Management in*

Education, *4*(4), 407–424.

Humphreys, D., & Davenport, A. (2005). What really matters in college: How students

view and value liberal education. Liberal Education & America's Promise. *Liberal*

Education, *91*(3), 36–43.

Inan, F., Yukselturk, E., & Grant, M. (2009). Profiling potential dropout students by

individual characteristics in an online certificate program. *International Journal of*

Instructional Media, *36*(2), 163–176.

Institute for Higher Education Policy. (2000). *Quality on the line: Benchmarks for success*

in Internet-based distance education. Washington D.C.

Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-

generation college students in the United States. *The Journal of Higher Education*,

77(5), 861–885. https://doi.org/10.1353/jhe.2006.0042

Jaggars, S. S., & Xu, D. (2010). *Online learning in the Virginia Community College system*

(CCRC Working Paper). *New York, NY: Columbia University, Teachers College,*

Community College Research Center.

Jackson Boothby, C. (2017). *Supporting online learners in higher education: The role of*

academic advising and student development in the new frontier of online learning:

The professionals' perspective (Order No. 10271052). Available from ProQuest

Dissertations & Theses Global. (1911698956). Retrieved from

http://stats.lib.pdx.edu/proxy.php?url=http://search.proquest.com.proxy.lib.pdx.e

du/docview/1911698956?accountid=13265

Johnson, K., Trabelsi, H., & Fabbro, E. (2008). Library support for e-learners: E-resources,

e-services, and the human factors. In T. Anderson (Ed.), *Theory and Practice of*

Online Learning (2nd ed., pp. 397–418). Edmonton, AB: AU Press.

Johnson, S. D., & Willging, P. A. (2009). Factors that influence students' decision to

dropout of online courses. *Journal of Asynchronous Learning Networks*, *13*(3), 115–

127.

Junco, R., Mastrodicasa, J. M., Aguiar, A. V., Longnecker, E. M., & Rokkum, J. N. (2016).

Impact of technology-mediated communication on student evaluations of advising.

NACADA Journal, *36*(2), 54–66. https://doi.org/10.12930/NACADA-16-014

Kalamkarian, H., & Karp, M. (2017). Student attitudes toward technology-mediated

advising systems. *Online Learning*, *21*(2). https://doi.org/10.24059/olj.v21i2.918

Keegan, D. (1996). *Foundations of distance education*. London; New York: Routledge.

Keppel, G. (1991). *Design and analysis: A researcher's handbook* (3rd ed.). Englewood

Cliffs, NJ: Prentice Hall.

Knowles, M. S. (Malcolm S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Association Press.

Krumenauer, G. (2018). Difficulty filling job vacancies requiring postsecondary certifications. Retrieved from State of Oregon Employment Department website: https://www.qualityinfo.org/home/-/asset_publisher/6DPMymNprbDt/content/difficulty-filling-job-vacancies-requiring-postsecondary-certifications?

LaPadula, M. (2003). A comprehensive look at online student support services for distance learners. *The American Journal of Distance Education*, *17*(2), 119–128.

Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research*, *76*(4), 567–605.

Lohsandt, M. C. (2005). *Online or in line: Perceptions of online learners in South Dakota regarding online student services*. (Doctoral dissertation). Retrieved from Proquest Dissertations and Theses. (UMI No. 3206234)

Lowenstein, M. (1999). An alternative to the developmental theory of advising. *The Mentor 1*(4). Retrieved from http://www.psu.edu/dus/mentor

Lowenstein, M. (2005). If advising is teaching, what do advisors teach? *NACADA Journal*, *25*(2), 65–73.

Lumina Foundation. (2012). *A stronger nation through higher education*. Indianapolis, IN.

Mccarron, G. P., & Inkelas, K. K. (2006). The Gap between educational aspirations and

attainment for first-generation college students and the role of parental

involvement. *Journal of College Student Development*, *47*(5), 534–549.

McGivney, R. J. (2009). *Adult student persistence in online education: Developing a

model to understand the factors that affect adult student persistence in a course*.

Educational Policy and Leadership. University of Massachusetts Amherst, Amherst,

MA.

Metzner, B. S. (1989). Perceived quality of academic advising: The effect on freshman

attrition. *American Educational Research Journal*, *26*(3), 422–442.

Moisey, S. D., & Hughes, J. A. (2008). Supporting the online learner. In T. Anderson (Ed.),

Theory and Practice of Online Learning (pp. 419–439). Edmonton, AB: AU Press.

Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and

distance learning environments: Are they the same? *The Internet and Higher

Education*, *14*(2), 129–135.

Morris, A., & Miller, M. (2007). Advising practices of undergraduate online students in

private higher education. *Online Journal of Distance Learning Administration*, *10*(4).

Retrieved from

http://www.westga.edu/~distance/ojdla/winter104/morris104.html

Moulton, R. G. (1917). The place of university extension in the history of education. In

Annual Conference of the National University Extension Association (pp. 55–59).

Boston: Wright and Potter.

Nipper, S. (1989). Third generation distance learning and computer conferencing. In R.

Mason & A. Kaye (Eds.), *Mindweave: Communication, computers and distance

education* (pp. 63–73). Elmsford, NY: Pergamon Press.

Noel-Levitz. (2012) *National online learners priorities report*. Coralville, IA. Retrieved

from

https://www.ruffalonl.com/upload/Papers_and_Research/2012/2012_Online_Lea

ners_Report.pdf

Nuñez, A.-M. (1998). *First-generation students: Undergraduates whose parents never

enrolled in postsecondary education* (Postsecondary education descriptive analysis

reports). Washington DC: U.S. Dept. of Education, Office of Educational Research

and Improvement, National Center for Education Statistics.

O'Banion, T. (1972). An academic advising model. *Junior College Journal*, *42*(6), 62–69.

Paneitz, R. H. (1997). *Community college students' perceptions of student services when

enrolled in telecourses.* (Doctoral dissertation). Colorado State University. Fort

Collins, CO.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of

research* (Vol. 2). San Francisco: Jossey-Bass.

Patterson, B., & McFadden, C. (2009). Attrition in online and campus degree programs.

Online Journal of Distance Learning Administration. Retrieved from

http://www2.westga.edu/~distance/ojdla/summer122/patterson112.html

Peterson, M., Wagner, J. A., & Lamb, C. W. (2001). The role of advising in non-returning

students' perceptions of their university. *Journal of Marketing for Higher Education*, *10*(3), 45–59.

Pitcher, M. T., & Paso, E. (2018). *Meet AD-VISOR : An adaptive advising system for a 21st century student demographic*. Paper presented at *ASEE Annual Conference and Exposition*. Salt Lake City, UT.

Portland State University. (2018). *EAB Student Success Collaborative: Coordinated service network.* Retrieved from https://www.pdx.edu/academic-affairs/eab-student-success-collaborative

Radford, A. W. (2011). *Learning at a Distance: Undergraduate enrollment in distance education courses and degree programs*. Washingon D.C.

Raphael, A. (2006). A needs assessment: A study of perceived need for student services by distance learners. *Online Journal of Distance Learning Administration*. Retrieved from http://distance.westga.edu/~distance/ojdla/summer92/raphael92.htm

Reynolds, L. M. (2003). Academic persistence in higher education. *Consumer Interests Annual*, *49*.

Rimbau-Gilabert, E., Martinez-Arguelles, M. J., & Ruiz-Dotras, E. (2010). Organizational structure of online academic advising: A case study. In *17th EDINEB Conference*. London.

Rimbau-Gilabert, E., Martinez-Arguelles, M. J., & Ruiz-Dotras, E. (2011). Developing models for online academic advising: Functions, tools and organisation of the advising system in a virtual university. *International Journal of Technology*

Enhanced Learning, *3*(2), 124–136.

Ross-Gordon, J. M. (2011). Research on adult learners: Supporting the needs of a

student population that is no longer nontraditional. *Peer Review*, *13*, 26–29.

Rovai, A. P., Ponton, M. K., & Wighting, M. J. (2007). A comparative analysis of student

motivation in traditional classroom and e-learning courses. *International Journal on

E-Learning*, *6*(3), 413–432.

Russell, T. L. (2001). *The no significant difference phenomenon: A comparative research

annotated bibliography on technology for distance education as reported in 355

research reports, summaries and papers*. Montgomery, AL: IDECC.

Ryan, Y. (2001). The provision of learner support services online. In G. Farrell (Ed.), *The

changing faces of virtual education* (pp. 71–94). Vancouver, Canada: The

Commonwealth of Learning.

Seaman, J. E., Allen, I. E., & Seaman, J. (2018). *GRADE INCREASE: Tracking distance

education in the United States*. Needham, MA. Babson Research Group.

Seidman, A. (1991). The evaluation of a pre/post admissions/counseling process at a

suburban community college: Impact on student satisfaction with the faculty and

the institution, retention, and academic performance. *College and University*, *66*(4),

223–232.

Shea, P. (2005). Serving student online: Enhancing their learning experience. *New

Directions for Student Services*, (112), 15–24.

Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A

national study of community college students. *Computers and Education*, *75*, 103–111.

Shin, W. S., & Kang, M. (2015). The use of a mobile learning management system at an online university and its effect on learning satisfaction and achievement. *International Review of Research in Open and Distributed Learning*, *16*(3), 110–130. https://doi.org/10.19173/irrodl.v16i3.1984

Smith, C. L., & Allen, J. M. (2006). Essential functions of academic advising: What students want and get. *NACADA Journal*, *26*(1), 56–66.

Smith, C. L., & Allen, J. M. (2014). Does contact with advisors predict judgments and attitudes consistent with student success? A multi-institutional study. *NACADA Journal.*, *34*(1), 50–63.

Steele, G. E. (2005). Distance advising. Retrieved from http://www.nacada.ksu.edu/clearinghouse/advisingissues/adv_distance.htm

Steele, G. E., & Thurmond, K. C. (2009). Academic advising in a virtual university. *New Directions for Higher Education*, *146*(Summer), 85–95.

Stermer, L. L. D. (2018). *The community of inquiry framework and academic advising: Online student perceptions*. (Doctoral Dissertation). Kansas State University. Retrieved from http://krex.k-state.edu/dspace/handle/2097/38804

Sumner, J. (2000). Serving the system: A critical history of distance education. *Open Learning*, *15*(3), 267–285.

Swecker, H. K., Fifolt, M., & Searby, L. (2013). Academic advising and first-generation

college students: A quantitative study on student retention. *NACADA Journal*,

33(1), 46–53. https://doi.org/10.12930/NACADA-13-192

Terenzini, P. T., Cabrera, A. F., & Bernal, E. M. (2001). Swimming against the tide: The

poor in American higher education. *College Board Research Report No 20011*, 52.

Retrieved from

http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.190.2910

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*.

Chicago: University of Chicago Press.

Trent, B. A. (1997). Student perceptions of academic advising in an RN-to-BSN program.

Journal of Continuing Education in Nursing, *28*(6).

Vianden, J., & Barlow, P. J. (2015). Strengthen the bond: Relationships between

academic advising quality and undergraduate student loyalty. *NACADA Journal*,

35(2), 15–27.

Waggenspack, B. M., & Hensley, W. E. (1992). The state of communication:

Undergraduate academic advising. *Association for Communication Administration

Bulletin*, (82), 18–27.

Watson, Z. E. P. (1994). The relationship between Black student level of academic

success and academic advisement: A case study. Retrieved from ERIC Database.

(ED379553)

West, R. E. (2011). Insights from research on distance education learners, learning, and

learner support. *American Journal of Distance Education*, *25*(3), 135–151.

Wiseman, C. S., & Messitt, H. (2010). Identifying components of a successful faculty-

advisor program. *NACADA Journal.*, *30*(2), 35–52.

Wolff, R. (2010). Accrediting online institutions and programs: Quality assurance or

bureaucratic hurdle? In K. E. Rudestam & J. Schoenholtz-Read (Eds.), *Handbook of*

online learning (pp. 423–444). Los Angeles: Sage.

Workman, J. J., & Stenard, R. A. (1996). Student support services for distance learners.

DEOSNEWS, *6*(3), 1–11.

Appendix A: Inventory of Academic Advising Functions- Student Version

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Instructions: Please answer the following questions according to your experiences at *Name of Institution***.**

What is your main reason for attending *Name of Institution?* (community college students only)

- ☐ To earn credit toward a bachelor's (four-year) degree
- ☐ Learn English
- ☐ Take a ABE/GED class
- ☐ Complete a certificate or career technical program at *Name of Institution*
- ☐ Take a course for personal interest
- ☐ Explore educational opportunities at *Name of Institution*
- ☐ Take a class for high school credit
- ☐ Improve writing, reading, or math skills
- ☐ Learn skills to get or keep a job
- ☐ Explore a new career area

Which of the following best describes where at *Name of Institution* **you get your PRIMARY academic advising, i.e., the advising you consider most central to your academic progress? (Choose one)**

- ☐ I have not received academic advice from faculty or staff at *Name of Institution*
- ☐ Adviser in my major department
- ☐ List include places at the institution where students might receive advising
- ☐ Other (please specify)

If you selected other, please specify

_____

On average, how often do you get advice from your primary source of advising, i.e., the advising you consider most central to your academic progress?

- ☐ I'm not currently getting academic advice from faculty or staff at *Name of Institution*
- ☐ At least once per term
- ☐ At least twice per year
- ☐ At least once per year

How do you access your primary source of advising, i.e., the advising you consider most central to your academic progress?

- ☐ Phone

☐ Email
☐ In person
☐ Fax

Please select the circle that best describes where you get most of your information about classes to take to meet requirements.
☐ Adviser/Professor in my major department
☐ List include places at the institution where students might receive advising
☐ Bulletin (University Catalog)
☐ Undergraduate Advising Website
☐ Departmental Website
☐ Friend(s)/Other Student(s)
☐ Family Member(s)

Overall, I am satisfied with the academic advising I receive at *Name of Institution***.**
☐ 1 Strongly Disagree
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Strongly Agree

It is important for me to graduate from college.
☐ 1 Strongly Disagree
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Strongly Agree

I am confident that I made the right decision in choosing to attend *Name of Institution***.**
☐ 1 Strongly Disagree
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Strongly Agree

I have a plan to achieve my educational goals.
☐ 1 Strongly Disagree
☐ 2
☐ 3
☐ 4

☐ 5
☐ 6 Strongly Agree

I have had at least one relationship with a faculty or staff member at *Name of Institution* **that has had a significant and positive influence on me.**
    ☐ 1 Strongly Disagree
    ☐ 2
    ☐ 3
    ☐ 4
    ☐ 5
    ☐ 6 Strongly Agree

I plan to graduate from *Name of Institution*.
    ☐ 1 Strongly Disagree
    ☐ 2
    ☐ 3
    ☐ 4
    ☐ 5
    ☐ 6 Strongly Agree

Overall, I am satisfied with my educational experience at *Name of Institution*.
    ☐ 1 Strongly Disagree
    ☐ 2
    ☐ 3
    ☐ 4
    ☐ 5
    ☐ 6 Strongly Agree

Highest educational level of your parent(s)/guardian(s)
Parent Number One
    ☐ High School degree or less, no college
    ☐ Some college, no degree
    ☐ Associate (2 year) degree
    ☐ Baccalaureate (e.g., BS or BA) degree or above

Parent Number Two
    ☐ Not applicable, I have only one parent
    ☐ High school degree or less, no college
    ☐ Some college, no degree
    ☐ Associate (2 year) degree
    ☐ Baccalaureate (e.g., BS or BA) degree or above

Does your family use a language other than English at home?
    ☐ No

☐ Yes

In the space provided, please indicate the name(s) of the language(s), other than English, used in your home.

_____
_____
_____
____

Have you ever been a foster child?
        ☐ No
        ☐ Yes

The following questions refer to various kinds of help that academic advisers might provide to students. Given your experience with your PRIMARY source of academic advising at *Name of Institution***, i.e., the advising you consider most central to your academic progress, make two ratings for each advising function.**

a. its importance to you
b. your satisfaction with the advising you receive

Advising that helps students connect their academic, career, and life goals.

        How important is this advising function to you?
        ☐ 1 Not Important
        ☐ 2
        ☐ 3
        ☐ 4
        ☐ 5
        ☐ 6 Very Important

        How satisfied are you with the advising you receive on this function?
        ☐ 1 Not Satisfied
        ☐ 2
        ☐ 3
        ☐ 4
        ☐ 5
        ☐ 6 Very Satisfied

Advising that helps students choose among courses in their major that connect their

academic, career, and life goals.

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

Advising that assists students with choosing among the various General Education options (e.g., *examples unique to each institution*) that connect their academic, career, and life goals.

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

Advising that assists students with deciding what kind of degree to pursue (*Examples for Universities include:* Bachelor of Science, Bachelor of Arts, Bachelor of Music. *Examples for community colleges include:* transfer degree, career technical degree, certifcate) in order to connect their academic, career, and life goals.

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

Advising that assists students with choosing out-of-class activities (e.g., part-time or summer employment, internships or practicum, participation in clubs or organizations) that connect their academic, career, and life goals.

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

When students need it, referral to campus resources that address academic problems (e.g., math or science tutoring, writing, disability accommodation, test anxiety).

How important is this advising function to you?
☐ 1 Not Important
☐ 2

☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

When students need it, referral to campus resources that address non-academic problems (e.g., child-care, financial, physical and mental health).

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

Assisting students with understanding how things work at *Name of Institution* **(understanding timelines, policies, and procedures with regard to registration, financial aid, grading, graduation, petitions and appeals, etc.).**

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
- ☐ 1 Not Satisfied
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Very Satisfied

Ability to give students accurate information about degree requirements.

How important is this advising function to you?
- ☐ 1 Not Important
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
- ☐ 1 Not Satisfied
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Very Satisfied

Taking into account students' skills, abilities, and interests in helping them choose courses.

How important is this advising function to you?
- ☐ 1 Not Important
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
- ☐ 1 Not Satisfied
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Very Satisfied

Knowing the student as an individual.

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

Encouraging students to assume responsibility for their education by helping them develop planning, problem-solving, and decision-making skills.

How important is this advising function to you?
☐ 1 Not Important
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Important

How satisfied are you with the advising you receive on this function?
☐ 1 Not Satisfied
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6 Very Satisfied

For the next series of questions, indicate your level of agreement.

It is important to develop an adviser/advisee relationship with someone on campus.
  ☐ 1 Strongly Disagree
  ☐ 2
  ☐ 3
  ☐ 4
  ☐ 5
  ☐ 6 Strongly Agree

There should be mandatory academic advising for students.
  ☐ 1 Strongly Disagree
  ☐ 2
  ☐ 3
  ☐ 4
  ☐ 5
  ☐ 6 Strongly Agree

43) I know what requirements (e.g., major, general education, other university requirements) I must fulfill in order to earn my degree.
  ☐ 1 Strongly Disagree
  ☐ 2
  ☐ 3
  ☐ 4
  ☐ 5
  ☐ 6 Strongly Agree

I understand how things work at *Name of Institution* **(timelines, policies, and procedures with regard to registration, financial aid, grading, graduation, petition and appeals, etc.)**
  ☐ 1 Strongly Disagree
  ☐ 2
  ☐ 3
  ☐ 4
  ☐ 5
  ☐ 6 Strongly Agree

I understand how my academic choices at *Name of Institution* **connect to my career and life goals.**
  ☐ 1 Strongly Disagree
  ☐ 2
  ☐ 3
  ☐ 4
  ☐ 5
  ☐ 6 Strongly Agree

When I have a problem, I know where at *Name of Institution* **I can go to get help.**
- ☐ 1 Strongly Disagree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Strongly Agree

I have used the Degree Audit Reporting System (DARS). *If applicable.*
- ☐ No
- ☐ Yes

DARS is helpful in understanding academic requirements at *Name of Institution* **and tracking progress toward my degree.**
- ☐ 1 Strongly Disagree
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 Strongly Agree

I believe I have been accurately advised by faculty or staff at *Name of Institution***.**
- ☐ Yes
- ☐ No

If no, what consequences resulted from the advising inaccuracy? (check all that apply)
- ☐ I have had to delay my graduation in order to take one or more additional classes.
- ☐ I have petitioned for an exception to an academic requirement.
- ☐ I have had to take one or more classes that I later discovered I didn't need *(for universities students* "to Graduate" *was adde*d).
- ☐☐ I took a course that did not transfer as I expected. *(An option for community college students)*
- ☐ I was placed in a course for which I was unprepared.
- ☐ Other (please specify)

If you selected other, please specify
_____

51) Please use the space below to comment about any aspect of advising at *Name of institution***:**

_____

_____

_____

_____

When you click the "next page" button, your survey will be submitted.

Appendix B: Typical Initial and Follow-up Email Messages Sent to Students

Initial email to students

Subject: Academic Advising at *Name of Institution* – We Need Your Input

Dear Student:

Academic advising is important to students, and because you are a student at Eastern Oregon University, I want to hear about your experiences with advising. We are inviting you to complete a survey that will tell us what you think about academic advising at *Name of Institution*. Your answers to these questions are crucial to our continued efforts to improve student experiences at *Name of Institution*, and we hope you will participate in this research by taking the 12 minutes required to complete the survey.   You can take the survey now through this link: Take the Survey.

Please be assured that the answers you provide will be kept confidential to the extent permitted by law. Special precautions have been established to protect the confidentiality of your responses by using an electronic system that will separate your survey responses from any personally identifiable information that could link your responses to you. Any information that is obtained in connection with this study that can be linked to you or identify you will be confidential. The answers you provide will be summarized along with the responses of other students so that your individual responses will never be identified in any report. There are no foreseeable risks to you as a participant in this project; nor are there any direct benefits. However, your participation is extremely valued.

Although your participation is entirely voluntary, we hope you will complete the survey. Your willingness or unwillingness to participate will not affect decisions involving course grades or other evaluations of your coursework, or your employment or relationship with *Name of Institution*.You may choose not to participate and can skip any question or withdraw at any time.

If you have questions about your rights as a participant in this research project, please contact *Name of Chair,* Chair of the *Name of Institution* Institutional Review Board (IRB) at (XXX) XXX-XXXX or by email at XXX@XXXXX.edu. If you have questions about the study itself, please contact *Survey Administrator* at (XXX) XXX-XXXX or XXX@XXXXX.edu.

Thank you for telling us what we are doing well with academic advising and where we need to improve. You can take the survey now through this link: Take the Survey.

Sincerely,

Senior Administrators

First follow-up email to students

Subject: Tell us about academic advising at *Name of Institution*

Dear *Name of Institution* Student:

A short time ago, we invited you to answer some questions related to academic advising and your experiences at *Name of Institution*. As a *Name of Institution* student, your answers to these questions are crucial to our continued efforts to improve academic advising at *Name of Institution*, and we hope you will participate in this research by taking the 12 minutes required to complete the survey. You can take the survey now through this link: Take the Survey.

Please be assured that the answers you provide will be kept confidential to the extent permitted by law. Special precautions have been established to protect the confidentiality of your responses by using an electronic system that will separate your survey responses from any personally identifiable information that could link your responses to you. Any information that is obtained in connection with this study that can be linked to you or identify you will be confidential. The answers you provide will be summarized along with the responses of other students so that your individual responses will never be identified in any report. There are no foreseeable risks to you as a participant in this project; nor are there any direct benefits. However, your participation is extremely valued.

Although your participation is entirely voluntary, we hope you will complete the survey. Your willingness or unwillingness to participate will not affect decisions involving course grades or other evaluations of your coursework, or your employment or relationship with *Name of Institution.* You may choose not to participate and can skip any question or withdraw at any time.

If you have questions about your rights as a participant in this research project, please contact Dr. *Name of Chair*, Chair of the *Name of Institution* Institutional Review Board (IRB) at (XXX) XXX-XXXX or by email at XXX@XXXXX.edu. If you have questions about the study itself, please contact *Survey Administrator* at (XXX) XXX-XXXX or XXX@XXXX.edu.

Thank you for telling us what we are doing well with academic advising and where we need to improve. You can take the survey now through this link: Take the Survey.

Sincerely,

Senior Administrators

Second follow-up email to students

Subject: Academic Advising: Your opinion matters

Dear *Name of Institution* Student:

We know this is a busy time of the year, but your opinion as an *Name of Institution* student matters to us and other decision makers at *Name of Institution*. That is why we are asking you once again to complete a survey about academic advising and your experiences at *Name of Institution*. You can take the survey by clicking here (add link).

Your answers to these questions are crucial to our continued efforts to improve the student experience at *Name of Institution*, and we hope you will participate in the research by taking the 12 minutes required to answer the questions. This survey will be open until (Insert date and time). There is still time to let your opinions be heard by clicking here (add link).

Please be assured that the answers you provide will be kept confidential to the extent permitted by law. Special precautions have been established to protect the confidentiality of your responses by using an electronic system that will separate your survey responses from any personally identifiable information that could link your responses to you. Any information that is obtained in connection with this study that can be linked to you or identify you will be confidential. The answers you provide will be summarized along with the responses of other students so that your individual responses will never be identified in any report. There are no foreseeable risks to you as a participant in this project; nor are there any direct benefits. However, your participation is extremely valued.

Although your participation is entirely voluntary, we hope you will complete the survey. Your willingness or unwillingness to participate will not affect decisions involving course grades or other evaluations of your coursework, or your employment or relationship with *Name of Institution*. You may choose not to participate and can skip any question or withdraw at any time.

If you have questions about your rights as a participant in this research project, please contact Dr. *Name of Chair*, Chair of the *Name of Institution* Institutional Review Board (IRB) at (XXX) XXX-XXXX or by email at XXX@XXXXX.edu. If you have questions about the study itself, please contact *Survey Administrator* at (XXX) XXX-XXXX or XXX@XXXXX.edu.

Thank you for telling us what we are doing well with academic advising and where we need to improve. You can take the survey now through this link: Take the Survey.

Sincerely,

Senior Administrators

Appendix C: Student Demographic and Enrollment Data and Definitions from Student

Information Systems (SIS) and Survey

Variable Name	Description
Initial Data from SIS on all Participants	
Data Reference number	Number assigned to each participant
Gender	Male, female
Race/Ethnicity	
Date of Birth	
Citizenship	US citizen or non-US citizen
Visa	Type of visa
EFC	Expected Family Contribution for Financial Aid
Pell	Amount of Pell grant received
High School Graduation date	Year student graduated from high school
actc	ACT Composite
satm	SAT Math
satv	SAT Verbal
High school GPA	
Class level	Freshmen, sophomore, junior, senior during term in which the survey is administered
Major_1	Student's major in the term in which the survey is administered
Admission Term	Term for which the student was first admitted and/or enrolled
Educational Source	The type of institution that the student was last enrolled in prior to enrolling in the study institution, e.g., Oregon high school, other high school, community college, other four year institution, GED, international high school, international four year institution
Source Institution	Name of the most recent institution attended prior to enrollment at the institution
Admission type	What is used to determine the admission status of the student - GED, New freshman from h. s., New freshman from h. s. w/ college credit, transfer frosh, transfer soph, transfer junior, transfer senior
Major	Major at the time the student took the survey
Term hrs	Hours completed in fall 2010
Term gpa	Fall 2010 GPA
Cum ins hrs	Cumulative Hours completed at institution at the time the student took the survey

Cum ins gpa	Cumulative Institutional GPA at the time the student took the survey
Cum gpa	Cumulative GPA including transfer and institution GPA at the time the student took the survey
Cum hrs	Cumulative hours including transfer and institution hours at the time the student took the survey
Acadstat	Academic standing , e.g., good standing, academic probation, at the time the student took the survey
Follow-up Data from SIS	
Enrollment	Is the student still enrolled in subsequent fall term
Major	Student's major in the subsequent fall term
Cum GPA	For in the subsequent fall term
Cum Hours	For in the subsequent fall term
Graduation Date	If the student has graduated, term in which the degree was awarded
Graduation Major	If the student has graduated, the major in which the degree was awarded
Demographic Data from the Survey	
Parent Education	To determine first generation college student status
Language Spoken at Home	
Former Foster Youth Status	