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

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

by

Stephen Philip Jenkins

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

Doctor of Education
in
Educational Leadership: Postsecondary Education

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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 <i>name of institution</i> in order to meet my educational goals
Knows Resources	When I have a problem, I know where at <i>name of institution</i> I can go to get help
Understands How Things Work	I understand how things work at <i>name of institution</i> (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 <i>name of institution</i> 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 <i>name of institution</i> 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 <i>n</i>	Response Rate	Online <i>n</i>	On-Campus <i>n</i>
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 <i>name of institution</i> .
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 <i>name of institution</i> .
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 <i>name of institution</i> that has had a significant and positive influence on me.
Plan to graduate	I plan to graduate from <i>name of institution</i> .
Overall Satisfaction	Overall, I am satisfied with my educational experience at <i>name of institution</i> .

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 be 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-variables 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, $\varepsilon = .66$ 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		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
<i>Integration</i>									
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
<i>Referral</i>									
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
<i>Information</i>									
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
<i>Individuation</i>									
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
<i>Shared Responsibility</i>									
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, $\chi^2 = 4.92$, $df = 2$, $p > .05$. 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. $\chi^2 = 4.92$, $df = 2$, $p > .05$. 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. $\chi^2 = 25.09$, $df = 2$, $p < .001$. Numbers in parentheses indicate column percentages.

The results of the chi-square analysis demonstrated that the overall model is statistically significant, $\chi^2 = 25.09$, $df = 2$, $p < .001$. 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, $\chi^2 = 2.23$, $df = 1$, $p > .05$. 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, $\chi^2 = 0.74$, $df = 1$, $p > .05$. 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, $\chi^2 = 25.09$, $df = 1$, $p < .001$, 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)

Learning Outcome	Frequency of Advising						Results of ANCOVAs
	More Than Once Per Year		Once Per Year		Not Advised/Not Currently Advised		
	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i>	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i>	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i>	
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 η^2 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)

Learning Outcome	Source of Advising						Results of ANCOVAs
	Adviser		Advising Tools		Informal Social Networks		
	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i>	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i>	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i>	
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 f^2 , 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 f^2 , 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 f^2 , 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 f^2 , 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 f^2 , 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 f^2 , 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 f^2 , 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 f^2 , 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	1 st Gen	Class Lvl	GPA	<i>R</i> ²	<i>f</i> ²	<i>F</i>	
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 <i>t</i> -test	Online and on-campus learners differed on 8 of the 12 functions. Online learners rated <i>ai</i> , <i>mc</i> , <i>oc</i> , <i>how</i> higher and <i>kai</i> , <i>ra</i> , <i>out</i> , <i>rn</i> 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: <i>gec</i> , <i>out</i> , <i>ra</i> , <i>rn</i> , <i>ai</i> , <i>kai</i> , <i>sr</i> , <i>sai</i> .
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 <i>adviser</i> and <i>advising tools</i> 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 <i>supports mandatory advising</i> 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 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?

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 significantly 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 twelfth 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 significantly 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 significant 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 responsibility*. 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 et 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 ($\beta = -.16$), was more predictive of online learner scores than was satisfaction ($\beta = .12$).

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 has 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 (Cerccone, 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; Waggenpack & 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.

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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, certificate*) 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 added*).
- ☐ 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@XXXX.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
<i>Initial Data from SIS on all Participants</i>	
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
<i>Follow-up Data from SIS</i>	
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
<i>Demographic Data from the Survey</i>	
Parent Education	To determine first generation college student status
Language Spoken at Home	
Former Foster Youth Status	