

Lindenwood University

Digital Commons@Lindenwood University

---

Faculty Scholarship

Research and Scholarship

---

9-2022

## Bridge Building in Higher Education: Multi-Modal Mentoring Programs to Support Retention & Career Preparedness

James Hutson

Lindenwood University, [jhutson@lindenwood.edu](mailto:jhutson@lindenwood.edu)

Roger Nasser

Lindenwood University, [RNasser@lindenwood.edu](mailto:RNasser@lindenwood.edu)

Michael Marzano

Lindenwood University, [MMarzano@lindenwood.edu](mailto:MMarzano@lindenwood.edu)

Ryan Curtis

Lindenwood University, [rcurtis@lindenwood.edu](mailto:rcurtis@lindenwood.edu)

Elizabeth MacDonald

Lindenwood University, [emacdonald@lindenwood.edu](mailto:emacdonald@lindenwood.edu)

*See next page for additional authors*

Follow this and additional works at: <https://digitalcommons.lindenwood.edu/faculty-research-papers>



Part of the [Education Commons](#)

---

### Recommended Citation

Hutson, James; Nasser, Roger; Marzano, Michael; Curtis, Ryan; MacDonald, Elizabeth; Edele, Sue; and Hosti-Martí, Barbara, "Bridge Building in Higher Education: Multi-Modal Mentoring Programs to Support Retention & Career Preparedness" (2022). *Faculty Scholarship*. 434.

<https://digitalcommons.lindenwood.edu/faculty-research-papers/434>

This Article is brought to you for free and open access by the Research and Scholarship at Digital Commons@Lindenwood University. It has been accepted for inclusion in Faculty Scholarship by an authorized administrator of Digital Commons@Lindenwood University. For more information, please contact [phuffman@lindenwood.edu](mailto:phuffman@lindenwood.edu).

---

**Authors**

James Hutson, Roger Nasser, Michael Marzano, Ryan Curtis, Elizabeth MacDonald, Sue Edele, and Barbara Hosti-Marti

# Bridge Building in Higher Education: Multi-Modal Mentoring Programs to Support Retention & Career Preparedness

James Hutson<sup>1</sup>, Roger Nasser<sup>2</sup>, Michael Marzano<sup>3</sup>, Ryan Curtis<sup>4</sup>, Elizabeth MacDonald<sup>5</sup>,  
Sue Edele<sup>6</sup>, Barbara Hosto-Marti<sup>7</sup>

<sup>1</sup>Department of Art History and Visual Culture, Lindenwood University, Saint Charles, USA

<sup>2</sup>Department of Educational Leadership, Lindenwood University, Saint Charles, USA

<sup>3</sup>Department of Management, Lindenwood University, Saint Charles, USA

<sup>4</sup>Department of Music, Lindenwood University, Saint Charles, USA

<sup>5</sup>Department of Library Services, Saint Charles, USA

<sup>6</sup>Department of English, Language, and Interdisciplinary Studies, Saint Charles, USA

<sup>7</sup>Department of Human Culture and Society, Saint Charles, USA

Email: [jhutson@lindenwood.edu](mailto:jhutson@lindenwood.edu), [rnasser@lindenwood.edu](mailto:rnasser@lindenwood.edu), [mmarzano@lindenwood.edu](mailto:mmarzano@lindenwood.edu), [rcurtis@lindenwood.edu](mailto:rcurtis@lindenwood.edu),  
[emacdonald@lindenwood.edu](mailto:emacdonald@lindenwood.edu), [sedele@lindenwood.edu](mailto:sedele@lindenwood.edu), [bhosto-marti@lindenwood.edu](mailto:bhosto-marti@lindenwood.edu)

**How to cite this paper:** Hutson, J., Nasser, R., Marzano, M., Curtis, R., MacDonald, E., Edele, S., & Hosto-Marti, B. (2022). Bridge Building in Higher Education: Multi-Modal Mentoring Programs to Support Retention & Career Preparedness. *Creative Education*, 13, 2811-2833.

<https://doi.org/10.4236/ce.2022.139178>

**Received:** August 15, 2022

**Accepted:** September 13, 2022

**Published:** September 16, 2022

Copyright © 2022 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

---

## Abstract

Despite the limitations on time for career preparedness and shrinking professional development budgets, mentoring remains as important as ever due to the interconnectedness in a global society and the changing demographics of postsecondary education students. The traditional-age population in college that lives on campus and does not work has been declining for over three decades. The majorities of current students that are now non-traditional, and work at least part-time are first-generation, and are pursuing degrees via distance or online learning. The importance of providing a diverse mentoring strategy for this new population is borne out in research in order to improve retention, persistence, and completion rates, as well as future professional success. As such, this study sheds light on the need to develop a multi-modal mentoring program to support different student populations through a flexible combination of faculty-student, student-student, alumni-student, and supervisor-student mentoring programs applied in different contexts and modalities. While results indicate that overall faculty-initiated mentoring is preferred by both populations and the most impactful method for mentoring is face-to-face with a faculty member with non-academic experience in the field of their discipline, other approaches are more effective for populations, such as first-generation, minority, and online and graduate students.

---

---

## Keywords

Mentorship, Peer Mentoring, Faculty Mentoring, Higher Education, Career Preparedness, Multi-Modal Design

---

## 1. Introduction

The diversity of students attending college today is higher than ever. The challenges of serving such a non-homogenous population continue to vex faculty, staff, and administrators as considerations go beyond learning styles and pedagogical strategies, but also include cultural expectations and backgrounds (Quaye, Griffin, & Museus, 2015). The shift has coincided with the demographic demand for higher education in that traditional-age populations continue to decline as the majority of students are not non-traditional and work off campus (Weise, 2020). A trend that has developed from this demographic shift is a move to more online offerings, especially for graduate programs (Allen & Seaman, 2014). At the same time, the role of instructors and mentors in this new asynchronous setting has changed (Beaudoin, 1990). The growth of online education is not surprising given that it offers greater flexibility, efficiency and cost-effectiveness as opposed to brick-and-mortar education (Dede, 1996; Yukselturk & Yildirim, 2008) while providing access to classes to those who would not have otherwise (Means et al., 2013). Even with these clear benefits and the growth in online education, there is still much consternation among academics. For instance, Xu and Jaggars (2013) noted that students were much more likely to withdraw from college if attending online versus face-to-face. Students from disadvantaged economic backgrounds are especially vulnerable to attrition.

One of the most impactful practices that affect recruitment, retention, and completion rates is professional mentoring. Through mentoring relationships students are prepared to engage with their academic or professional communities upon graduation (Hezlett & Gibson, 2005; Hughes, Welsh, Mayer, Bolay, & Southard, 2009; Lunsford, Crisp, Dolan, & Wuetherick, 2017; Goerisch, Basiliere, Rosener, McKee, Hunt, & Parker, 2019; Dominguez & Kochan, 2020). Such relationships are able to build large networks that lead to additional opportunities (Barnes & Austin, 2009; Crisp & Cruz, 2009). Beyond the professional benefits, mentorship between faculty and students supports student persistence, which is especially important for online students who face additional challenges (Black, 2017). Without such relationships, there is a noted lack of connection between the two groups and students may become disconnected, leading to a loss of motivation. The issue is exacerbated by the use of digital media in online learning environments. The resulting lack of intrinsic motivation and feelings of disconnect from the professor and their degree can lead students to be dissatisfied with their college experience in general and result in poor completion rates in the online environment. Online learning in general has its own set of chal-

allenges due to the asynchronous nature (AuCoin & Wright, 2021), which is certainly true for e-mentoring (Mullen, 2021). Argente-Linares et al. (2017) define e-mentoring “as the process in which electronic media are used as the main channel of communication between the mentor and mentee” (p. 401). In considering these challenges, online research mentoring can be fraught with communication and technical difficulties due to language barriers. Students may be in different geographical locations that have different communication infrastructures and local languages (Mack, Cummings, Huff, Gosha, & Gilbert, 2019).

Other challenges face faculty when considering graduate student mentorship. The primary goal of graduate student-faculty mentor relationship is often seen to be the achievement of academic goals on the part of the mentee. However, faculty can also assist students by guiding them into the academic community and introducing them to their own professional networks (Green, Ammah, Butler-Byrd, Brandon, & McIntosh, 2017; Almond et al., 2021). Studies have demonstrated the effectiveness of mentoring programs, either faculty-to-student or student-to-student (Nora & Crisp, 2007; Brunnsma, Embrick, & Shin, 2017; Black, 2017; Baranik et al., 2017; Kutsyuruba & Godden, 2019; Almond et al., 2021; AuCoin & Wright, 2021); however, there is little agreement on a definition for mentoring, let alone straightforward best practices for institutions to adopt for e-mentoring adult learners. What is agreed upon is that mentoring is a dynamic process that involves input from both the mentor and mentee and evolves over time. The three main goals of mentoring focus on different aspects of the mentee’s life, including personal, educational, and career growth (Cohen, 1995; Lee & Cramond, 1999; Herman & Mandell, 2005). As adult learners have different life experiences, levels of educational preparedness, and maturity as compared to traditional students, any mentorship program must be designed to be flexible to make adjustments and account for these factors (Fletcher, 2007; Hansman, 2009).

The benefits of mentoring programs go beyond student retention and address other pressing concerns of higher education. For instance, just as with industry where research has demonstrated that it is more economical to retain employees than hire and train new ones, so too is it more economical to retain students than recruit. Furthermore, studies have confirmed that much of training and employee development is found outside of traditional professional development programs common to onboarding procedures. What is otherwise known as “learning transfer” from one individual to another is best accomplished through formal mentoring programs in industry and academia (Appelbaum, 2000). As such, this paper seeks to identify different mentoring strategies to align with the needs of different populations in higher education. Given the unique backgrounds and experiences of non-traditional students, a singular strategy for formal mentoring to meet the needs of students is not possible. As this study demonstrates, there is a need to develop a multi-modal mentoring program to support different student populations through a flexible combination of facul-

ty-student, student-student, alumni-student, and supervisor-student mentoring programs applied in different contexts and modalities. While results indicate that overall faculty-initiated mentoring is preferred by both populations and the most impactful method for mentoring is face-to-face with a faculty member with non-academic experience in the field of their discipline, other approaches are more effective for populations, such as first-generation, minority, and online and graduate students.

## **2. Literature Review**

### **2.1. Formal and Informal Mentoring Programs**

The usefulness of mentoring programs has been confirmed for both industry and education for both faculty and students. For students, successful mentorships lead to improved success rates (Khan & Gogos, 2013; Pinto Zipp et al., 2009), retention rates (Khan & Gogos, 2013; Mason, 2012), and ensure students are introduced to their academic and professional communities (Curtin et al., 2016; Gardner, 2008). At the same time, ineffectual mentorships are found to have the opposite effects (Jones, 2013).

Mentorship programs exist in most organizations today and can be classified as either formal or informal (Hobson & Taylor, 2020). The very existence of such programs leads to greater perceptions of competitiveness and attract employees in industry and students in academic (Mathews, 2006). Informal mentoring programs are often loosely designed and do not have a definitive objective or time frame. Formal mentoring programs, on the other hand, have an objective with outcomes and are structured with a definitive time frame (Keele, Buckner, & Bushnell, 1987; Orpen, 1997; Kulik & Roberson, 2008). There are other differences among the programs, including how mentors are selected and who participates. Informal programs are often staffed by volunteer mentors and paired with mentees they select whereas formal programs find mentors to be uniquely selected given their skills and paired with an advanced mentee, such as in graduate research projects. As well, informal programs often have indirect outcomes for the company, such as improved retention or morale, whereas formal programs have established goals, such as improving publications or grants in a particular area (Ragins et al., 2007). As will be noted in the literature below, benefits can be attributed to each approach, but, more specifically, informal peer mentoring and formal faculty mentoring relationships have proven to be the most effective.

### **2.2. Paradigms of Mentorship**

The process of mentoring, whether through a formal program at an institution or an informal set of meetings, involves relationships between two or more individuals. In the transactional exchange that occurs during the evolving phases of mentorship, the mentor role consists of interrelated behavioral functions that coalesce to serve the individual needs of adult learners. Cohen (1995) has noted

that the role is most appropriately served by a professional-as-mentor, or an individual in the field instead of a professional advisor, though they must demonstrate excellent interpersonal communication skills. The additional six functions played by a mentor include relationship building (trust), information transaction (advice), facilitator (alternatives), confronter (challenge), mentor model (motivate), and vision (encourage initiative). In this model, the mentor must understand that they are a provider of assistance and the mentee receiver of assistance. The relationship must unfold over a substantial period of time. Yet, while there are several mentoring models, there remains an unclear definition for what mentoring actually entails. There are many paradigms that include the historical, epistemological, theoretical, practical, and international perspectives (Irby et al., 2020). Dominguez and Kochan (2020) argue that mentoring is grounded in philosophical, historical, and sociological elements. These scholars noted that the qualities of mentoring are agreed upon, but not their formal or specific applications. Furthermore, the literature on mentoring is fraught with discursive discrepancies which has led to multiple definitions that do not possess a common framework (Bozeman & Feeney, 2007).

One such definition links mentorship to social capital. Heffron (2020) argued, using the Soka model of mentoring, that the mentor/mentee relationship was not one-sided, but in fact reciprocal. Long (2010) confirmed the benefits of this model of reciprocity and found that both faculty and students profited by way of higher graduation rates and higher satisfaction in the educational process. However, in order for the reciprocal model of mentorship to be effective, mentors and mentees must be matched appropriately, especially in online mentoring (Andersen & West, 2020). If approached with this end-goal in mind, the relationship will develop into one of equality (Heffron, 2020). The approach moves beyond human resource definitions and reverses the previous understanding of hegemony in a mentoring relationship and builds upon arguments of social capital in research (Gaddis, 2012; Hezlett & Gibson, 2007; Kay & Wallace, 2009). Approaches considering social capital are important for research into non-traditional, adult students, who are often first-generation. The degree of familiarity students have with the collegiate system, coupled with their status as a first-generation student, also colors their expectations and experience due to perceptions of cultural and social capital (Bourdieu, 1986; Coleman, 1988). As defined by Bills (2003), cultural capital represents “degree of ease and familiarity that one has with the ‘dominant’ culture of a society” (p. 90). As a form of capital that deals with relationships between individuals, social capital facilitates the exchange of different resources. As such, students whose parents have advanced degrees often have a distinct advantage with social capital compared to their first-generation counterparts in fully realizing the potential of higher education to assist with both personal development and socioeconomic attainment. The resources provided by family relationships of college-educated parents include clear access to human and cultural capital. Conversely, first-generation students, who do not have highly educated parents, are not able to access the same support and are thus less

likely to understand information and attitudes necessary for making self-beneficial decisions, such as the significance of college selection, completing a college degree, and the types of academic and social experiences to take advantage of while matriculating.

The background and experience of graduate students, as noted, will color how they view mentoring relationships. [Shapiro \(2020\)](#), for instance, identifies connections between mentoring and constructivism. The author connects the various stages of mentoring relationships to each type of constructivism, including coaching and mentoring, as well as mentoring styles and roles. The comparison highlights the extent to which constructivist thinking is ingrained in mentoring theories. Through the study, [Shapiro \(2020\)](#) relates the manner in which personality instruments may be used to match mentors and mentees for more effective outcomes. On the other hand, [Brondyk \(2020\)](#) approached mentoring with the theory of loose coupling. In order to demonstrate the theory, the author considered the experiences of student teachers and their supervisors in an educator preparation program (EPP). Through the qualitative data collected from the participants, [Brondyk \(2020\)](#) was able to demonstrate that there were certainly identifiable structures and autonomy seen within each organization but that these varied. Additionally, there was still a balance between autonomy and coherence in these examples. As such, relationship-based mentoring has been used as a theoretical framework for programs in multiple studies of higher education ([Andersen & West, 2020](#)).

### 2.3. Mentoring Practices

These paradigms are brought to bear in mentoring practices that in an educational context are broad and complex. At all levels from secondary to postsecondary, educators are mentored; however, there is a lack of agreement on what best practice is for different areas and for different populations ([Brondyk & Searby, 2013](#)). One of the reasons that the most effective strategy cannot be identified lies in the nature of studies on mentorship, which are generally small-scale qualitative case studies in diverse contexts. While Seaby ([Irby et al., 2020](#)) laments the case and how it is not possible to then generalize to all mentoring, different strategies are, in fact, required for different populations. For instance, [Bottoms et al. \(2020\)](#) studied the practice of mentorship through Communities of Practice (CoP), noting that learning is a social activity and not an internal process of an individual. There are several dimensions of CoP that encompass joint enterprise, shared practices, and mutual engagement. Alternatively, [Baker et al. \(2020\)](#) compared mentoring at different higher education institutions, including liberal arts colleges, community colleges, and research universities. The study attempted to discern different mentoring approaches taken that varied by institutional type and level of instruction. Their mixed-methods study found many commonalities between the different strategies and came up with three recommendations: strengthen orientation and onboarding efforts with peer-mentoring programs; provide incentives and institutional support for senior faculty to en-



courage mentorship participation; and, finally, support scholarly pursuits by having senior faculty mentor junior faculty.

In essence, there are several levels to consider in a mentoring program, including the phases of engagement with the institution from both the faculty and student perspective. This would include onboarding, early engagement and support, peer and faculty mentoring in scholarly pursuits, and professional preparation. Cohen (1995) outlined the following as developmental mentoring relationships in four phases: early, middle, later, and last. Different types of behaviors are important for each phase to be successful. In the early phase, a mentor focuses on interpersonal development and trust-building. Next, a mentor communicates the factual information necessary to meet each mentee's goals. The later phase sees the mentor exploring the mentee's interests and beliefs, while also confronting the mentee's self-limiting strategies to assist with growth and self-actualization. Finally, the last phase sees the mentor functioning in the "mentor model" through active motivation of the mentee to reflect on their own goals, encourages the pursuit of challenges, and pursues the personal, educational, and career paths. As such, mentoring can be understood as a "transactional process." Through collaborative participation and mutual critical thinking and reflecting, the mentor and mentee consider the process, value, and goal of mentorship (Cohen, 1995: p. 14). An important element in mentoring as transaction is risk taking. Galbraith (1991) noted that the three types of risk taking are the risks of commitment, confrontation, and independence. Through the acceptance of these risk factors, a mentee moves through a process of self-confrontation and change.

#### 2.4. Adult Student E-Mentoring

Adult students who are considering an online or distance education program require additional considerations for mentorship programs. In fact, early academic advising and guidance is necessary to retain graduate students and to ensure they apply to begin with. Lunceford (2011), a self-identified first-generation graduate student, relates that graduate studies only become a possibility once an advisor and/or mentor convinces students that is a possibility for them. Tinto (Longwell-Grice & Longwell-Grice, 2008) earlier noted the sentiment by arguing that the relationships formed by students with faculty mentors positively influence retention. Longwell-Grice & Longwell-Grice (2008) confirms that relationships between students and faculty increase persistence for adult, online students. Having a strong mentoring program and developing mentoring relationships with graduate students enhances the likelihood of student success, as a review of the literature reveals. For instance, Tinoco-Giraldo et al. (2020) provided a comprehensive review of the e-mentoring programs from 2009-2019 and noted how studies confirmed the importance of mentoring to a population physically separated from campus culture, other students, and faculty. At the same time, there exists little agreement on the definitions and best practices for e-mentoring. Nevertheless, the authors concluded that from the literature that there are sever-

al considerations to successfully implement an e-mentoring program in higher education. First, administration needs to acknowledge the importance of mentoring both teachers and students. Faculty need to be formally trained to serve as mentors and, in turn, be invested in their own training.

Other reviews of e-mentoring practices for doctoral students were undertaken by Mullen, Fish, and Hutinger (2010), Byrnes et al. (2019), Columbaro (2009), and Fraenza and Rye (2021). The authors summarized the most important themes into six categories to effectively support online doctoral students through their dissertations once coursework was completed that include the following: Competence, Availability, Induction, Challenge, Communication, and Emotional Support. Demonstrating competence on the part of the mentor through imparting their own research experience and saving graduate students undue stress or uncertainty assists in student retention. Mentors should also be available for the population that has other obligations in order to build relationships (Barnes & Austin, 2009). In order to be present for mentees, mentors should establish frequent meeting times to stay involved (Andrew, 2012). At such meetings, mentors may find induction to be the most reasonable way to guide students in similar research projects or guiding them to specific journals to publish in or conferences to present their work at (Andrew, 2012; Grady, 2016; Jacobs et al., 2015; Rademaker et al., 2016; Roumell & Bolliger, 2017). Mentors also need to provide challenge for students. In order to assist mentees in becoming comfortable with the process, mentors can provide straightforward and substantive feedback throughout (Andrews, 2016; Kumar & Coe, 2017; Rademaker et al., 2016; Terry & Ghosh, 2015). Several researchers have noted the importance of mentors to provide regular and supportive communication to mentees (Erichsen et al., 2014; Rademaker et al., 2016; Stadtlander & Giles, 2010; Terry & Ghosh, 2015), while also maintaining approachability to encourage student comfort with discussing sensitive or challenging issues. One strategy to foster an open relationship would be for mentors to encourage students to ask questions of them early in the mentorship. Finally, emotional support is critical (Duffy et al., 2019) given that online students are physically distanced from their academic community. Mentors need to provide additional support so that students feel confident in their achievements and may persist (Doyle et al., 2016; Erichsen et al., 2014; Kumar & Johnson, 2017; Rademaker et al., 2016; Terry & Ghosh, 2015). To further foster confidence in their abilities, mentors should allow mentees to lead early mentoring meetings.

Almond et al. (2021) conducted a study of online graduate students in Family Science programs and noted several elements of effective mentoring. These include the characteristics of a successful mentor, the selection of a mentor, diversity of graduate students, and online mentoring, choosing a mentor, characteristics of a successful mentor, diverse graduate students, and online mentoring. Regarding online mentoring, the authors note that being thoughtful and self-aware is very important with regards to digital body language since there is a notable

lack of non-verbal communication. Kumar and Johnson (2017) also noted the challenges of communicating through technology where body language cues and non-verbal communication could be lost. Additional difficulties were reported, such as creating trust in the mentoring relationship in an online environment along with potential isolation and confusion due to insufficient communication techniques (Kumar & Johnson, 2017).

At the same time, the potential benefits of e-mentoring are prevalent in both faculty-student and student-student mentoring interactions. Culpeper and Kan (2020) confirm that rapport is built in peer-mentoring discussion threads in online classes through the use of different communicative styles. Such rapport building can be a successful form of mentoring if those involved engage in productive communication, are flexible and actually use technology to enhance (rather than inhibit) communication. Yob and Crawford (2012) had already predicted the rapid growth and preference for online graduate programs. With the alignment of that trend in conjunction with campus closures during the pandemic, online or e-mentoring has become a topic of great interest given its flexibility and asynchronous nature. When technology is used in an appropriate fashion and digital body language is carefully considered, online mentoring of graduate students can be quite successful (Kumar et al., 2013; Yob & Crawford, 2012). Once the online mentoring relationship is successfully established, through the flexibility afforded the modality, students will improve in their learning, growth, and independence as a scholar (Andrew, 2012; Kumar et al., 2013). As with traditional mentoring communication, the success of online mentorships for graduate students can be seen when progress, guidance, and goals are visible and detailed (Kumar & Johnson, 2017; Kumar et al., 2013). Fletcher (2007) supports the assertion in the early phases of the relationship where the realization of possible selves clarifies goals for the relationship and what type of self-actualization and growth is agreed upon. While research into what successful online mentorship entails is ongoing, researchers suggest that the experiences of traditional face-to-face and online graduate students are relatively similar (Kumar et al., 2013).

## 2.5. Peer Mentoring

Online mentoring not only benefits students, but also faculty and is impacted by strategies that include peer-mentoring. Tinoco-Giraldo et al. (2020) noted that peer-mentoring not only benefits students, but also instructors as leadership skills are developed. One way to predict the success in online peer-mentoring is whether the feeling of relatedness exists among students. Baranik et al. (2017), using the self-determination theory, confirmed that relatedness predicts the feelings of connectedness and learning in online learning communities. In other words, developing close relationships with a peer-mentor early on in an online class will lead to great receptivity to faculty mentoring in the mid- and later stages of the course. This is not to say that developing these relationships is en-

tirely asynchronous. Zhao et al. (2005) noted that to ensure mentoring relationships develop, especially between faculty and students, some synchronous communication should occur, though this may be as little as one meeting. The same has not been found to be true for peer-mentoring. The researchers note that having just one peer mentor in a class improves student satisfaction, classroom community, and final grades. Also, similar studies have demonstrated that electronic, asynchronous communication is as effective for peer-mentoring relationships as meeting face-to-face (Smith-Jentsch et al., 2008; Culpeper & Kan, 2020), which suggests students will benefit from peer mentoring even if they never meet.

In order to facilitate peer-mentoring relationships, instructors should design assignments and activities that ensure students actively create a learning community (Ritter & Polnick, 2008; Lorenzetti et al., 2019) and developing peer mentor relationships. Baranik et al. (2017) and Jones et al. (2018) recommend including social activities in the curriculum and assignments that generate informal mentoring relationships, such as group projects, creating social media accounts for the class (e.g. Facebook or Discord), exchanging emails and phone numbers at the outset of the course with at least one other student. Instructors may also choose to formally assign two students to peer mentor one another and have regular meetings scheduled. Although mentoring relationships among peers are more effective if they are not assigned, which lead to greater personal investment (Ragins & Cotton, 1999), research suggests that formally assigning a peer-mentor is more helpful than not having one at all (Chao, Walz, & Gardner, 1992). Colvin and Ashman (2010) likewise noted the confusion that may arise in formal mentoring programs when students are not clear on their roles in the relationship, necessitating clear guidelines be provided by the instructor at the outset. The recommendations are supported by recent findings that students participating in classroom activities that promoted social interaction exhibited more student-student dialogue and instructor-student dialogue, which lead to more self-efficacy (Cajiao & Burke, 2016). In order to further facilitate the development of such relationships, advisors should also recommend students take additional online classes as a cohort with others they perceive to be peer mentors.

### 3. Methodology

The mixed-methods study included data from surveys collected from students and faculty. The sample was collected from Lindenwood University, a private, four-year, liberal arts institution in the suburban ring of St. Louis, Missouri. Participants included 68 faculty and 365 students from the Colleges of Education and Human Services, Arts and Humanities, Science, Health and Technology, and The Plaster College of Business and Entrepreneurship. The purpose of the project was to assess the perceptions of mentoring, the paradigms and elements from the faculty and student perspective in order to propose a formal mentoring

program to train faculty and staff. This project utilized a mixed-methods study design which included qualitative (open-ended comments) and thematic (quantitative) results from an online survey. The survey was administered in Fall of 2021 and collected data on student demographics, modality of attendance, perceptions of mentoring, and the most important elements to consider in a formal program. The elements of mentoring and design of formal, informal, and faculty-student, as well as peer-mentoring programs were drawn from previous literature (Colvin & Ashman, 2010; Cornelius et al., 2016; Lane, 2020). Faculties were asked to identify their current strategies for mentoring students. Students were asked to indicate via a 1 - 10 Likert scale the most important elements in a mentoring program and ranked the available options from most to least important. Students and faculty were asked an open-ended question regarding needs for successful mentoring. Students were contacted either through the University course management system or were emailed with links to online surveys. The survey was available for approximately two-weeks at the end of the term and all data was collected using Qualtrics to ensure privacy and anonymity of responses. These results were sorted based on demographics (such as self-identified first-generation graduate students, undergraduates, international students, etc.) and data were exported for the survey system. Descriptive statistics were calculated and used for comparisons between groups.

## 4. Results

The study examined student perspectives and opinions related to mentoring through review of descriptive and open-ended responses. The research specifically sought student definitions and experiences of mentoring at the study site and possible differences among student populations. This study included two research questions.

Research Question 1: What are student perceptions of effective mentorship, and how do these perceptions differ based on student identity?

Research Question 2: How are faculty perceptions of mentoring similar or different from those reported by students?

The participants completed a survey instrument consisting of Likert scale and open-ended items. We analyzed the numeric and open-ended responses for common themes through descriptive and content analysis. The total sample size for this study was 365 students and 68 full-time faculty members.

### 4.1. Demographic Considerations

It is essential to share specific demographic data prior to sharing results of the study. While we discuss several of these groups in later sections, providing an overall viewpoint clarifies the scope of the study. The majority of participants (56.3%) indicated they were undergraduates, with 42.9% stating they were graduate students at the time of the study. The respondents represented the following age groups:

- 18 - 24 (50%)
- 25 - 34 (25.8%)
- 35 - 44 (8.2%)
- 45 - 54 (8.7%)
- 55 - 64 (5.2%)
- over 65 (2.2%)

The gender breakdown for this study included participants identifying as male (27.2%), female (70.1%), and non-binary (2.8%). The study obtained a diverse sample with 12.9% of respondents indicating a Hispanic/Latinx background, 14.6% indicating African-America/Black racial background, and an equal percentage (3.1%) of students indicating Asia background or American Indian/Alaskan Native. In addition, International students composed 12.7% of the respondent population.

Student involvement in activities is an important consideration for this study and the study discusses the implications later in this section. Student athletes represented 17.3% of the sample, while 11.2% of participants indicated they held campus employment. Residential students accounted for 36.4% of responses with 47.8% of students primarily enrolled in distance education. While the study site returned to face-to-face instruction prior to the start of this research, the Covid-19 pandemic may have impacted student choice.

#### 4.2. Research Question 1

The first research question asked how students perceive mentorship at the study site and if these perceptions differed based on student identity. The authors feel it is important to note that the faculty initiated a majority of mentoring relationships, according to student participants, to provide framing for the discussion. Respondents were asked their definition of mentoring, their current experiences with mentors, preference with the communication style of mentoring activities, the professional role of mentors, and preferred mentorship activities.

We asked participants if they currently had a mentor at the university. Surprisingly, only 37% of students indicated having a mentor on campus. However, the amount of students with mentors increased for students engaged in campus activities. Student-athletes (47.2%) and those with campus employment (56.1%) reported having a mentor on campus. These results may indicate a natural mentorship relationship between those engaged in campus activities and the professionals overseeing the activities. Minority students, regardless of campus involvement, indicated the lowest level of mentorship with 29.8% of Hispanic/Latinx respondents currently involved in a mentorship relationship. First-generation students also reported less experience with mentorship, with 32.6% having a mentor.

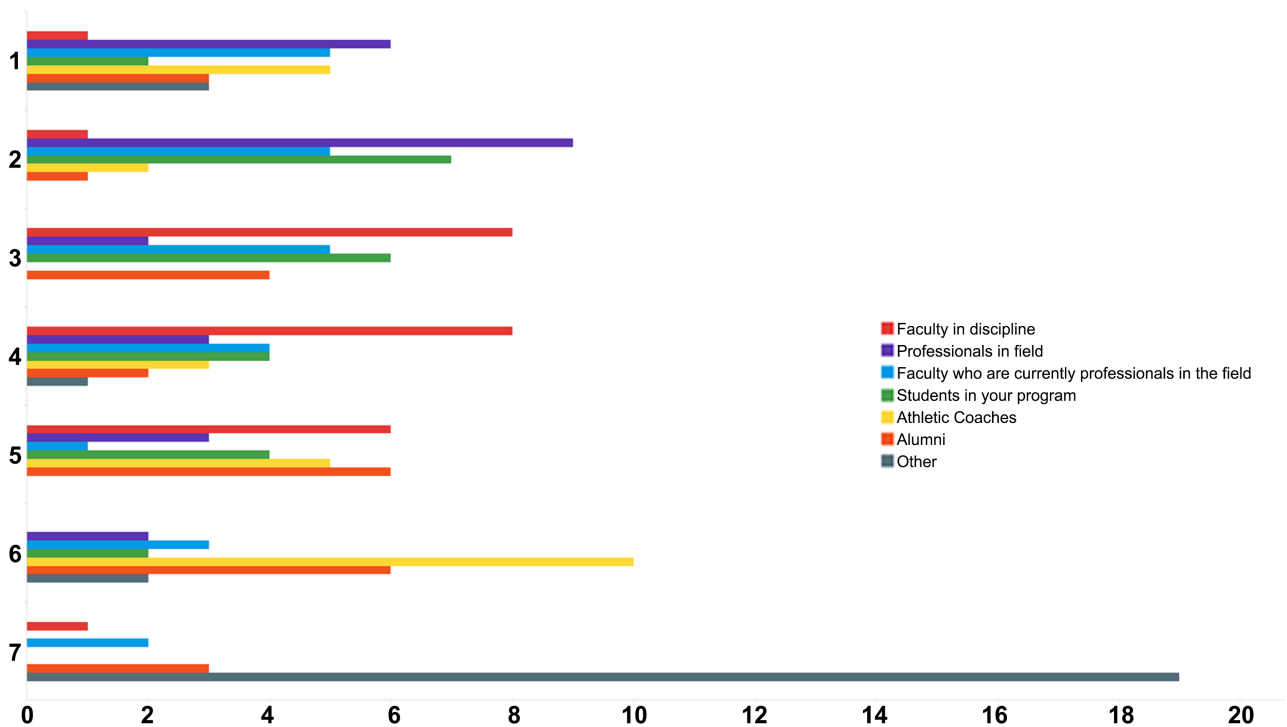
Students were then asked to rank what effective mentoring scenarios were most beneficial. The options were taken from previous faculty and staff surveys on the types of mentors and mentoring activities previously undertaken. Stu-

dents indicated their preferences for mentors in the following ranked order **Figure 1**:

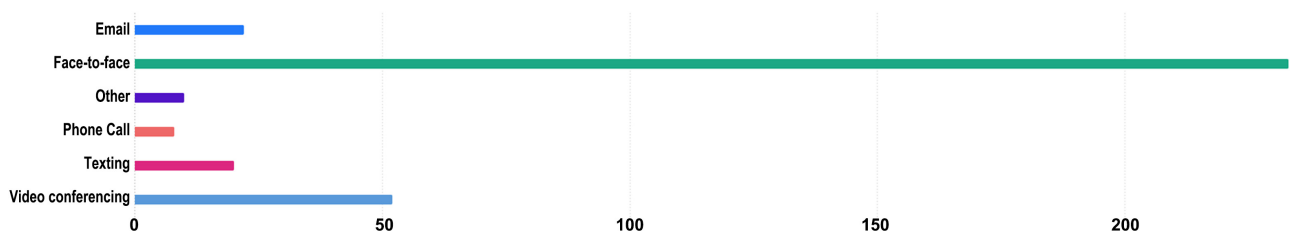
- 1) Faculty in discipline
- 2) Professionals in field
- 3) Faculty who are currently professionals in the field
- 4) Students in your program
- 5) Athletic Coaches
- 6) Alumni

The results indicate a preference for faculty expertise in the field, but also experience gained in the field. Peer-mentorship was also ranked high and preferred, interestingly enough, over coaches or alumni working in the field. When questioned about the preferred method of communication for mentorship exchanges or meetings, students ranked their preferred modalities as follows **Figure 2**:

- 1) Face-to-face



**Figure 1.** Student ranking of effective mentoring scenarios.



**Figure 2.** Student ranking of effective mentoring modalities.



- 2) Video conferencing
- 3) Email
- 4) Phone Call
- 5) Texting
- 6) Other

The overwhelming preference for face-to-face mentorship is notable given the literature on serving working adult students. The need for personal connection does, however, confirm previous studies.

Thematic analysis of open-ended responses indicated that students defined mentorship in two ways. First, the majority of participant responses (62%) suggested that a mentor is an active guide. Students felt mentors should help them with career connections, answer questions, and share their experience to benefit the mentee. We feel it is important to note the active nature of this guidance. Many respondents suggested deliverables from the mentorship experiences. For example, one participant suggested a strong career result from the mentor when stating, “a structured, empowering relationships with someone who can be an advocate & champion, provide and ask for advice, and connect me to networks that may be out of reach on my own”. Similarly, another participant suggested mentors may drive a mentee’s career path. This respondent expressed, “Utilizing a more knowledgeable other to guide and assist the mentee in educational, professional, and or career advancement”. Finally, several students shared that active guidance from their mentors is essential in difficult situations. One participant stated, “Some who helps guide you through a somewhat difficult process that they had gone through themselves (ex. Getting a college degree)”. We feel the responses related to guidance suggest the mentor maintains an active role with the student instead of waiting for the student to request assistance.

The second theme for mentorship was personal support. About 30% of students indicated they expected mentors to provide personal support to them. Several participants suggested this personal support equates to growth opportunities. In other words, the mentee’s self-improvement is the result of the mentorship relationship. One participant noted, “To help you grow as a person and become the best version of yourself. This may involve helping you achieve your personal or career goals, introducing you to new ways of thinking, challenging your limiting assumptions, sharing valuable life lessons, and much more”. Other participants hinted the personal growth benefits the mentor and the mentee through mutual investment. One student stated, “I define mentoring as a working together partnership of teaching and learning skills that will positively impact the outcomes of all involved parties.” These responses mirror expectations from a supervision relationship, specifically synergistic supervision (Winston & Creamer; Tull). Finally, many respondents indicated the growth through the personal mentoring relationship is a process. One participant remarked, “Mentoring can be a form of support and encouragement from an advisor, to help students manage their learning and improve upon their performance, accommodative with the version of themselves they would like to be”.



In conclusion, these themes of active guidance and personal support appeared consistent among student populations, including campus involvement, ethnicity, and academic delivery method.

### 4.3. Research Question 2

The second research question examined similarities and differences between faculty perceptions of mentoring and student perceptions. Both populations responded to questions considering the most beneficial mentorship experiences. We provide 14 options for participants to rank on a scale of 1 (most impactful) to 10 (least impactful). These experiences included: career advice, research with a mentor, technical or task training, discussions about professional goals, discussions best fit for career placement, networking in the field, career communications such as cover letters, teaching philosophy, portfolio development, discussions about personal goals and struggles, workforce preparation activities, discussions about specific projects, and assistance in experiential learning opportunities including internships. Student responses were ranked as follows and demonstrate a focus on career-preparedness:

- 1) Career Advice
- 2) Discussions about specific projects
- 3) Networking in the field
- 4) Research with a mentor
- 5) Technical/task training
- 6) Discussions about professional goals
- 7) Discussions best fit for career placement
- 8) Assistance in experiential learning opportunities (internship/practicum)
- 9) Career communications (e.g. Cover Letters, Recommendations, Statements of Purpose)
- 10) Teaching Philosophy
- 11) Portfolio Development (Manuscript for Publication, Art and Design, Teaching, etc.)
- 12) Discussions about personal goals and struggles
- 13) Workforce preparation activities

We analyzed the results by combing the percentages of respondents who ranked each option as a top two option. Descriptive results suggested some similarities between student and faculty responses. For example, both populations suggested minimal value for teaching philosophy with no faculty and only 4% of students rating this option in their top two choices. This result may be due to the limited career options for students outside of the education field. In addition, both populations placed little value on assistance in experiential learning such as internships and practicum opportunities with 8.8% of faculty and 11.6% of students indicating this activity as important in the mentorship relationship.

There were also discrepancies between the faculty and student responses. Students (56.3%) perceived career advice as more important in the mentorship rela-

tionship than faculty (35.3). This result is significant considering the themes discussed earlier. The student perspective appears to match the content analysis regarding the importance of receiving guidance from the mentor. The most surprising difference between the populations was regarding discussion of goals. Faculty perceived discussion of both personal and professional goals as more important mentoring activities than students. 41.1% of faculty rated professional goals in their top two options while rating personal goals and struggles at 44.12%. Conversely, 17.4% of student respondents rated professional goals in their top two mentoring activities and 18.4% included personal goals and struggles as a top activity. This difference is important to consider, since about 30% of student open-ended responses suggested a personal relationship as essential from their mentor. Perhaps student participants defined mentoring as what they wish they received and responded to the activity question from an actual perspective. Finally, with regard to the design of the study, a larger number than expected of students and alumni (39%) began the survey and affirmed they would participate but did not move beyond that section. Future investigation would consider the structure of the instrument to improve response and completion rates.

## 5. Conclusion

Results of the study demonstrate the differences in expectations and perceptions of faculty and students with regards to mentoring. The first consideration would be that students feel that they need mentoring and that does not currently exist for them. Where mentoring is noted, students preferred face-to-face or virtual modalities from faculty who had experience in their field of study. Additionally, students noted an expectation to have mentors address both professional and personal issues that arise over their collegiate careers. With that being said, students perceived career advice as more important in the mentoring relation than faculty. On the other hand, faculty believed that goal setting was much more significant than student respondents. Overall, students indicated that a personal relationship and interest in them as individuals was crucial for successful mentoring relationships. How those relationships are fostered, however, has been recently challenged given the pandemic and various modalities of mentorship have evolved.

In order to address the needs of a broader population, who may be commuters, graduate students and/or non-traditional students, the technological strategies adopted over the past two years can be leveraged in the creation of formal mentoring programs. Such programs, if well-designed and considered, will result in greater persistence, retention, and completion rates, not only among graduate students, but also provide a greater sense of accomplishment and connectedness with students for graduate faculty. With both faculty and students, retention is a more manageable strategy than handling high turnover or attrition and recruiting and training new students and faculty. The necessity of mentoring programs

is beneficial for all parties involved. In essence, there are several levels to consider in a mentoring program, including the phases of engagement with the institution from both the faculty and student perspective. This would include onboarding, early engagement and support, peer and faculty mentoring in scholarly pursuits, and professional preparation. Finally, a multi-modal approach should be considered, and not just for non-traditional students. The needs of students in a research-intensive program are different than those in pre-professional programs. As such, combining multiple strategies outlined above to address the needs of different populations should be a central concern of higher education institutions.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

### References

- Allen, I. E., & Seaman, J. (2014). *Grade Change: Tracking Online Education in the United States*. Babson Survey Research Group and Quahog Research Group, LLC.  
<http://www.onlinelearningsurvey.com/reports/gradechange.pdf>
- Almond, L., Parson, L., & Resor, J. (2021). Lessons from the Field: Graduate Student-Faculty Mentoring in Family Science. *Family Relations*, 70, 1600-1611.  
<https://doi.org/10.1111/fare.12517>
- Andersen, C. L., & West, R. E. (2020). Improving Mentoring in Higher Education in Undergraduate Education and Exploring Implications for Online Learning. *Revista de Educación a Distancia*, 20, Article 2. <https://doi.org/10.6018/red.408671>
- Andrew, M. (2012). Supervising Doctorates at a Distance: Three Trans-Tasman Stories. *Quality Assurance in Education*, 20, 42-53. <https://doi.org/10.1108/09684881211198239>
- Andrews, K. (2016). Correlation between Mentors and Learners Perceptions of Mentors Behaviors in Completing Online Doctoral Dissertations. *Journal of Higher Education Theory and Practice*, 16, 71-80.
- Appelbaum, I. (2000). Mentoring: A Strategy to Recruit and Retain Top PR Professionals. *Public Relations Strategist*, 6, 18-20.
- Argente-Linares, E., Pérez-López, M. C., & Ordóñez-Solana, C. (2017). Practical Experience of Blended Mentoring in Higher Education. *Mentoring & Tutoring: Partnership in Learning*, 24, 399-414. <https://doi.org/10.1080/13611267.2016.1273449>
- AuCoin, D. J., & Wright, L. A. (2021). Student Perceptions in Online Higher Education toward Faculty Mentoring. *E-Learning and Digital Media*, 18, 599-615.  
<https://doi.org/10.1177/20427530211022927>
- Baker, V. L., Gonzales, L. D., & Terosky, A. L. (2020). Faculty-Inspired Strategies for Early Career Success across Institutional Types: The Role of Mentoring. In B. J. Irby, J. N. Boswell, L. J. Searby, F. Kochan, R. Garza, & N. Abdelrahman (Eds.), *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities* (pp. 223-241). Wiley Online Library. <https://doi.org/10.1002/9781119142973.ch14>
- Baranik, L. E., Wright, N. A., & Reburn, K. L. (2017). Mentoring Relationships in Online Classes. *The Internet and Higher Education*, 34, 65-71.  
<https://doi.org/10.1016/j.iheduc.2017.05.001>

- Barnes, B. J., & Austin, A. E. (2009). The Role of Doctoral Advisors: A Look at Advising from the Advisor's Perspective. *Innovative High Education, 33*, 297-315. <https://doi.org/10.1007/s10755-008-9084-x>
- Beaudoin, M. (1990). The Instructor's Changing Role in Distance Education. *American Journal of Distance Education, 4*, 21-29. <https://doi.org/10.1080/08923649009526701>
- Bills, D. (2003). Credentials, Signals, and Screens: Explaining the Relationship between Schooling and Job Assignment. *Review of Educational Research, 73*, 441-469. <https://doi.org/10.3102/00346543073004441>
- Black, R. (2017). E-Mentoring the Online Doctoral Student from the Dissertation Prospectus through Dissertation Completion. *Journal of Learning in Higher Education, 13*, 1-8.
- Bottoms, S. I., Pegg, J., Adams, A., Risser, H. S., & Wu, K. (2020). Mentoring within Communities of Practice. *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities* (pp. 141-166)
- Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). Greenwood.
- Bozeman, B., & Feeney, M. K. (2007). Toward a Useful Theory of Mentoring: A Conceptual Analysis and Critique. *Administration & Society, 39*, 719-739. <https://doi.org/10.1177/0095399707304119>
- Brondyk, S. (2020). Mentoring as Loose Coupling: Theory in Action. In B. J. Irby, J. N. Boswell, L. J. Searby, F. Kochan, R. Garza, & N. Abdelrahman (Eds.), *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities* (pp. 79-96). Wiley Online Library. <https://doi.org/10.1002/9781119142973.ch6>
- Brondyk, S., & Searby, L. (2013). Best Practices in Mentoring: Complexities and Possibilities. *International Journal of Mentoring and Coaching in Education, 2*, 189-203. <https://doi.org/10.1108/IJMCE-07-2013-0040>
- Brunsmas, D. L., Embrick, D. G., & Shin, J. H. (2017). Graduate Students of Color: Race, Racism, and Mentoring in the White Waters of Academia. *Sociology of Race and Ethnicity, 3*, 1-13. <https://doi.org/10.1177/2332649216681565>
- Byrnes, D., Uribe-Flórez, L. J., Trespalacios, J., & Chilson, J. (2019). Doctoral E-Mentoring: Current Practices and Effective Strategies. *Online Learning Journal, 23*, 236-248. <https://doi.org/10.24059/olj.v23i1.1446>
- Cajiao, J., & Burke, M. J. (2016). How Instructional Methods Influence Skill Development in Management Education. *Academy of Management Learning and Education, 15*, 508-524. <https://doi.org/10.5465/amle.2013.0354>
- Chao, G. T., Walz, P. M., & Gardner, P. D. (1992). Formal and Informal Mentorships: A Comparison of Mentoring Functions and Contrast with Nonmentored Counterparts. *Personnel Psychology, 45*, 619-636. <https://doi.org/10.1111/j.1744-6570.1992.tb00863.x>
- Cohen, N. (1995). *Mentoring Adult Learners: A Guide for Educators and Trainers*. Krieger Publishing Company.
- Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology, 94*, S95-S120. <https://doi.org/10.1086/228943>
- Columbaro, N. L. (2009). e-Mentoring Possibilities for Online Doctoral Students: A Literature Review. *Adult Learning, 20*, 9-15. <https://doi.org/10.1177/104515950902000305>
- Colvin, J. W., & Ashman, M. (2010). Roles, Risks, and Benefits of Peer Mentoring Relationships in Higher Education. *Mentoring & Tutoring: Partnerships in Learning, 18*, 121-134. <https://doi.org/10.1080/13611261003678879>
- Cornelius, V., Wood, L., & Lai, J. (2016). Implementation and Evaluation of a Formal Academic-Peer-Mentoring Programme in Higher Education. *Active Learning in High-*

- er Education*, 17, 193-205. <https://doi.org/10.1177/1469787416654796>
- Crisp, G., & Cruz, I. (2009). Mentoring College Students: A Critical Review of the Literature between 1990 and 2007. *Research in Higher Education*, 50, 525-545. <https://doi.org/10.1007/s11162-009-9130-2>
- Culpeper, J., & Kan, Q. (2020). Communicative Styles, Rapport, and Student Engagement: An Online Peer Mentoring Scheme. *Applied Linguistics*, 41, 756-786. <https://doi.org/10.1093/applin/amz035>
- Curtin, N., Malley, J., & Stewart, A. J. (2016). Mentoring the Next Generation of Faculty: Supporting Academic Career Aspirations among Doctoral Students. *Research in Higher Education*, 57, 714-738. <https://doi.org/10.1007/s11162-015-9403-x>
- Dede, C. (1996). The Evolution of Distance Education: Emerging Technologies and Distributed Learning. *The American Journal of Distance Education*, 10, 4-36. <https://doi.org/10.1080/08923649609526919>
- Dominguez, N., & Kochan, F. (2020). Defining Mentoring: An Elusive Search for Meaning and a Path for the Future. In B. J. Irby et al. (Eds.), *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities* (pp. 1-18). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781119142973.ch1>
- Doyle, N., Jacobs, K., & Ryan, C. (2016). Faculty Mentors' Perspectives on E-Mentoring Post-Professional Occupational Therapy Doctoral Students. *Occupational Therapy International*, 23, 305-317. <https://doi.org/10.1002/oti.1431>
- Duffy, J., Wickersham-Fish, L., Rademaker, L., & Wetzler, E. (2019). Using Collaborative Autoethnography to Explore Online Doctoral Mentoring: Finding Empathy in Mentor/Protégé Relationships. *American Journal of Qualitative Research*, 2, 57-76. <https://doi.org/10.29333/ajqr/5794>
- Erichsen, E. A., Bolliger, D. U., & Halupa, C. (2014). Students Satisfaction with Graduate Supervision in Doctoral Programs Delivered in Distance Education Settings. *Studies in Higher Education*, 39, 321-338. <https://doi.org/10.1080/03075079.2012.709496>
- Fletcher, S. (2007). Mentoring Adult Learners: Realizing Possible Selves. *New Directions for Adult and Continuing Education*, 114, 75-86. <https://doi.org/10.1002/ace.258>
- Fraenza, C., & Rye, T. (2021). Supporting the Social Integration of Online Doctoral Students through Peer Mentoring. *Learning Assistance Review (TLAR)*, 26, 133-161.
- Gaddis, S. M. (2012). What's in a Relationship? An Examination of Social Capital, Race and Class in Mentoring Relationships. *Social Forces*, 90, 1237-1269. <https://doi.org/10.1093/sf/sos003>
- Galbraith, M. W. (1991). The Adult Learning Transactional Process. In *Facilitating Adult Learning: A Transactional Process* (pp. 1-32). Krieger Publishing Company.
- Gardner, S. K. (2008). Fitting the Mold of Graduate School: A Qualitative Study of Socialization in Doctoral Education. *Innovative Higher Education*, 33, 125-138. <https://doi.org/10.1007/s10755-008-9068-x>
- Goerisch, D., Basiliere, J., Rosener, A., McKee, K., Hunt, J., & Parker, T. M. (2019). Mentoring with: Reimagining Mentoring across the University. *Gender, Place & Culture*, 26, 1740-1758. <https://doi.org/10.1080/0966369X.2019.1668752>
- Grady, M. L. (2016). Doctoral Students in a Distance Program: Advising and Degree Completion Strategies. *Journal of Academic Administration in Higher Education*, 12, 49-52.
- Green, T. D., Ammah, B. B., Butler-Byrd, N., Brandon, R., & McIntosh, A. (2017). African-American Mentoring Program (AAMP): Addressing the Cracks in the Graduate Education Pipeline. *Mentoring & Tutoring: Partnership in Learning*, 25, 528-547.

- <https://doi.org/10.1080/13611267.2017.1415807>
- Hansman, C. (2009). Ethical Issues in Mentoring Adults in Higher Education. *New Directions for Adult and Continuing Education, 2009*, 53-63. <https://doi.org/10.1002/ace.343>
- Heffron, J. M. (2020). Social Capital as Mentoring: A New Paradigm in Action. In B. J. Irby, J. N. Boswell, L. J. Searby, F. Kochan, R. Garza, & N. Abdelrahman (Eds.), *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities* (pp. 29-43). Wiley Online Library. <https://doi.org/10.1002/9781119142973.ch3>
- Herman, L., & Mandell, A. (2005). *From Teaching to Mentoring: Principles and Practice, Dialogue and Life in Adult Education*. Routledge.
- Hezlett, S. A., & Gibson, S. K. (2007). Linking Mentoring and Social Capital: Implications for Career and Organization Development. *Advances in Developing Human Resources, 9*, 384-411. <https://doi.org/10.1177/1523422307304102>
- Hezlett, S., & Gibson, S. (2005). Mentoring and Human Resource Development: Where We Are and Where We Need to Go. *Advances in Developed Human Resources, 7*, 446-469. <https://doi.org/10.1177/1523422305279667>
- Hobson, K., & Taylor, Z. W. (2020). Mentoring.ca: Types of Mentoring Programs Featured on Canadian Postsecondary Education Websites. *International Journal of Mentoring and Coaching in Education, 9*, 279-290. <https://doi.org/10.1108/IJMCE-09-2019-0089>
- Hughes, C., Welsh, M., Mayer, A., Bolay, J., & Southard, K. (2009). An Innovative University-Based Mentoring Program: Affecting College Students' Attitudes and Engagement. *Michigan Journal of Community Service Learning, 16*, 69-78.
- Irby, B., Boswell, J., Searby, L., Kochan, F., Garza, R., & Abdelrahman, N. (Eds.) (2020). *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities*. Wiley Online Library. <https://doi.org/10.1002/9781119142973>
- Jacobs, K., Doyle, N., & Ryan, C. (2015). The Nature, Perception, and Impact of E-Mentoring on Post-Professional Occupational Therapy Doctoral Students. *Occupational Therapy in Health Care, 29*, 201-213. <https://doi.org/10.3109/07380577.2015.1006752>
- Jones, H. A., Perrin, P. B., Heller, M. B., Hailu, S., & Barnett, C. (2018). Black Psychology Graduate Students' Lives Matter: Using Informal Mentoring to Create an Inclusive Climate amidst National Race-Related Events. *Professional Psychology: Research and Practice, 49*, 75-82. <https://doi.org/10.1037/pro0000169>
- Jones, J. (2013). Factors Influencing Mentees' and Mentors' Learning throughout Formal-mentoring Relationships. *Human Resource Development International, 16*, 390-408.
- Kay, F. M., & Wallace, J. E. (2009). Mentors as Social Capital: Gender, Mentors, and Career Rewards in Law Practice. *Sociological Inquiry, 79*, 418-452. <https://doi.org/10.1111/j.1475-682X.2009.00301.x>
- Keele, R., Buckner, K., & Bushnell, S. (1987). Formal Mentoring Programs Are No Panacea. *Management Review, 76*, 67.
- Khan, R., & Gogos, A. (2013). Online Mentoring for Biotechnology Graduate Students: An Industry-Academia Partnership. *Journal of Asynchronous Learning Networks, 17*, 89-107. <https://doi.org/10.24059/olj.v17i1.294>
- Kulik, C. T., & Roberson, L. (2008). Diversity Initiative Effectiveness: What Organizations Can (and Cannot) Expect from Diversity Recruitment, Diversity Training, and Formal Mentoring Programs. In A. P. Brief (Ed.), *Cambridge Companions to Management*.



- Diversity at Work* (p. 265-317). Cambridge University Press.  
<https://doi.org/10.1017/CBO9780511753725.010>
- Kumar, S., & Coe, C. (2017). Mentoring and Student Support in Online Doctoral Programs. *American Journal of Distance Education, 31*, 128-142.  
<https://doi.org/10.1080/08923647.2017.1300464>
- Kumar, S., & Johnson, M. (2017). Mentoring Doctoral Students Online: Mentor Strategies and Challenges. *Mentoring & Tutoring: Partnership in Learning, 25*, 202-222.  
<https://doi.org/10.1080/13611267.2017.1326693>
- Kumar, S., Johnson, M., & Hardemon, T. (2013). Dissertations at a Distance: Students' Perceptions of Online Mentoring in a Doctoral Program. *Journal of Distance Education, 27*, 1-11.
- Kutsyruba, B., & Godden, L. (2019). The Role of Mentoring and Coaching as a Means of Supporting the Well-Being of Educators and Students. *International Journal of Mentoring and Coaching in Education, 8*, 229-234.  
<https://doi.org/10.1108/IJMCE-12-2019-081>
- Lane, S. R. (2020). Addressing the Stressful First Year in College: Could Peer Mentoring Be a Critical Strategy? *Journal of College Student Retention: Research, Theory & Practice, 22*, 481-496. <https://doi.org/10.1177/1521025118773319>
- Lee, J., & Cramond, B. (1999). The Positive Effects of Mentoring Economically Disadvantaged Students. *Professional School Counseling, 2*, 172-178.
- Long, E. (2010). Mentoring Undergraduates: Professors Strategically Guiding the Next Generation of Professionals. *Michigan Family Review, 14*, 11-27.  
<https://doi.org/10.3998/mfr.4919087.0014.104>
- Longwell-Grice, R., & Longwell-Grice, H. (2008). Testing Tinto: How Do Retention Theories Work for First-Generation, Working-Class Students? *Journal of College Student Retention: Research, Theory & Practice, 9*, 407-420.  
<https://doi.org/10.2190/CS.9.4.a>
- Lorenzetti, D. L., Shipton, L., Nowell, L., Jacobsen, M., Lorenzetti, L., Clancy, T., & Pao-lucci, E. O. (2019). A Systematic Review of Graduate Student Peer Mentorship in Academia. *Mentoring & Tutoring: Partnership in Learning, 27*, 549-576.  
<https://doi.org/10.1080/13611267.2019.1686694>
- Lunceford, B. (2011). When First-Generation Students Go to Graduate School. *New Directions for Teaching and Learning, 2011*, 13-20. <https://doi.org/10.1002/tl.453>
- Lunsford, L. G., Crisp, G., Dolan, E. L., & Wuetherick, B. (2017). Chapter 20: Mentoring in Higher Education. In D. A. Clutterbuck (Eds.), *The SAGE Handbook of Mentoring* (pp. 316-334). SAGE Publications Ltd. <https://doi.org/10.4135/9781526402011.n20>
- Mack, N. A., Cummings, R., Huff, E. W., Gosha, K., & Gilbert, J. E. (2019). Exploring the Needs and Preferences of Underrepresented Minority stUdents for an Intelligent Virtual Mentoring System. In C. Stephanidis, & M. Antona (Eds.), *International Conference on Human-Computer Interaction* (pp. 213-221). Springer.  
[https://doi.org/10.1007/978-3-030-30712-7\\_28](https://doi.org/10.1007/978-3-030-30712-7_28)
- Mason, M. M. (2012). Motivation, Satisfaction, and Innate Psychological Needs. *International Journal of Doctoral Studies, 7*, 259-277. <https://doi.org/10.28945/1596>
- Mathews, P. (2006). The Role of Mentoring in Promoting Organizational Competitiveness. *Competitiveness Review, 16*, 158-169.  
<https://doi.org/10.1108/10595420610760743>
- Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature. *Teachers College*

- Record*, 115, 1-47. <https://doi.org/10.1177/016146811311500307>
- Mullen, C. A. (2021). Online Doctoral Mentoring in a Pandemic: Help or Hindrance to Academic Progress on Dissertations? *International Journal of Mentoring and Coaching in Education*, 10, 139-157. <https://doi.org/10.1108/IJMCE-06-2020-0029>
- Mullen, C. A., Fish, V. L., & Hutinger, J. L. (2010). Mentoring Doctoral Students through Scholastic Engagement: Adult Learning Principles in Action. *Journal of Further and Higher Education*, 34, 179-197. <https://doi.org/10.1080/03098771003695452>
- Nora, A., & Crisp, G. (2007). Mentoring Students: Conceptualizing and Validating the Multi-Dimensions of a Support System. *Journal of College Student Retention: Research, Theory & Practice*, 9, 337-356. <https://doi.org/10.2190/CS.9.3.e>
- Orpen, C. (1997). The Effects of Formal Mentoring on Employee Work Motivation, Organizational Commitment and Job Performance. *The Learning Organization*, 4, 53-60. <https://doi.org/10.1108/09696479710160906>
- Pinto Zipp, G., Cahill, T., & Clark, M. (2009). The Role of Collaborative Scholarship in the Mentorship of Doctoral Students. *Journal of College Teaching & Learning*, 6, 29-36. <https://doi.org/10.19030/tlc.v6i8.1111>
- Quaye, S. J., Griffin, K. A., & Museus, S. D. (2015). Engaging Students of Color. In S. J. Quaye, & S. R. Harper (Eds.), *Student Engagement in Higher Education: Theoretical Perspectives and Practical Approaches for Diverse Populations* (pp. 15-35). Routledge.
- Rademaker, L. L., O'Connor Duffy, J., Wetzler, E., & Zaikina-Montgomery, H. (2016). Chair Perceptions of Trust between Mentor and Mentee in Online Doctoral Dissertation Mentoring. *Online Learning*, 20, 1-13. <https://doi.org/10.24059/olj.v20i1.605>
- Ragins, B. R., & Cotton, J. L. (1999). Mentor Functions and Outcomes: A Comparison of Men and Women in Formal and Informal Mentoring Relationships. *Journal of Applied Psychology*, 84, 529-550. <https://doi.org/10.1037/0021-9010.84.4.529>
- Ragins, B., Ragins, R. & Kram, K. E. (2007) *The Handbook of Mentoring at Work: Theory, Research, and Practice*. Sage Publications, Inc. <https://doi.org/10.4135/9781412976619>
- Ritter, C., & Polnick, B. (2008). Connections: An Essential Element of Online Learning Communities. *International Journal of Educational Leadership Preparation*, 3.
- Roumell, E. A. L., & Bolliger, D. U. (2017). Experience of Faculty with Doctoral Student Supervision in Programs Delivered via Distance. *The Journal of Continuing Higher Education*, 65, 82-93. <https://doi.org/10.1080/07377363.2017.1320179>
- Shapiro, A. (2020). Constructivism and Mentoring. In B. J. Irby (Eds.), *The Wiley International Handbook of Mentoring: Paradigms, Practices, Programs, and Possibilities* (pp. 65-78). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781119142973.ch5>
- Smith-Jentsch, K. A., Scielzo, S. A., Yarbrough, C. S., & Rosopa, P. J. (2008). A Comparison of Face-to-Face and Electronic Peer-Mentoring. Interactions with Mentor Gender. *Journal of Vocational Behavior*, 72, 193-206. <https://doi.org/10.1016/j.jvb.2007.11.004>
- Stadtlander, L. M., & Giles, M. J. (2010). Virtual Instruction: A Qualitative Research Laboratory Course. *Teaching of Psychology*, 37, 281-286. <https://doi.org/10.1080/00986283.2010.510971>
- Terry, T., & Ghosh, R. (2015). Mentoring from Different Social Spheres: How Can Multiple Mentors Help in Doctoral Student Success in Ed.D. Programs? *Mentoring & Tutoring: Partnership in Learning*, 23, 187-212. <https://doi.org/10.1080/13611267.2015.1072396>
- Tinoco-Giraldo, H., Torrecilla Sánchez, E. M., & García-Peñalvo, F. J. (2020). E-Mentoring in Higher Education: A Structured Literature Review and Implications for Future Re-



- search. *Sustainability*, 12, Article 4344. <https://doi.org/10.3390/su12114344>
- Weise, M. R. (2020). *Long Life Learning: Preparing for Jobs That Don't Even Exist Yet*. John Wiley & Sons.
- Xu, D., & Jaggars, S. S. (2013). *Adaptability to Online Learning: Differences across Types of Students and Academic Subject Areas*. CCRC Working Paper No. 54, Columbia University, Teachers College, Community College Research Center.
- Yob, I., & Crawford, L. (2012). Conceptual Framework for Mentoring Doctoral Students. *Higher Learning Research Communications*, 2, 34-47. <https://doi.org/10.18870/hlrc.v2i2.66>
- Yukselturk, E., & Yildirim, Z. (2008). Investigation of Interaction, Online Support, Course Structure and Flexibility as the Contributing Factors to Students' Satisfaction in an Online Certificate Program. *Journal of Educational Technology & Society*, 11, 51-65.
- Zhao, Y., Lei, J., Yan, B., Lai, C., & Tan, H. (2005). What Makes the Difference? A Practical Analysis of Research on the Effectiveness of Distance Education. *Teachers College Record*, 107, 1836-1884. <https://doi.org/10.1111/j.1467-9620.2005.00544.x>