

ABSTRACT

Title of Dissertation: DESCRIBING THE INEFFABLE: A
MIXED-METHODS STUDY OF FACULTY
MENTORING INFORMATION
PRACTICES

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Formal mentoring programs are a valuable tool for the professional development and socialization of new employees, and for the mentor. However, formal mentoring is often difficult to institutionalize. What are the indications that mentor and mentee should be split up? How often should mentoring partners meet? These questions and others highlight the problem: without a clear definition of mentoring itself, we are challenged to identify the characteristics of good mentoring. Mentoring is so contextual, and generally so private, that it is difficult to define. However, there is one element that is central to all mentoring

relationships, and that can be used to describe mentoring explicitly – the exchange of information. The study described here consists of a longitudinal, mixed-method investigation of mentoring attitudes and practices among higher education faculty, with the goal of gathering data about the information practices – information seeking and sharing in a social context – of faculty engaged in mentoring. The study identifies the information practices of faculty who are engaged in mentoring, as well as how those information practices change across time. Faculty were surveyed about their attitudes toward mentoring, using an online instrument. The respondents provided data about their experiences with mentoring, including aspects such as the frequency of their meetings with mentoring partners, the topics they often discussed, the number of years they had worked with mentoring partners, their expectations of their mentoring partners, and their personal philosophy of mentoring. Faculty mentoring participants also completed an online diary of their mentoring information practices. The information diary provided an opportunity for faculty mentoring participants to share their information practices in real time, without requiring a prohibitive amount of effort. Data analysis shows that faculty mentoring participants do engage in information practices, such as seeking or sharing information regarding the specifics of the work environment, with the goal of transmitting culture (e.g., the requirements to achieve tenure). Both mentors and mentees value honest and open

communication with their mentoring partners. Examination of the information exchanged between mentoring participants gives us a sense of what topics are most likely to be addressed, and also recommendations for new mentors and mentees.

DESCRIBING THE INEFFABLE: A MIXED-METHODS STUDY OF
FACULTY MENTORING INFORMATION PRACTICES

by

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Table of Contents

Acknowledgements	ii
Table of Contents	iii
List of Tables	vi
List of Figures	vii
Chapter 1: Introduction	1
1.1 Problem Statement	4
1.2 Rationale	5
1.3 Goals of the Study	6
1.4 Research Questions	7
1.5 Theoretical Framework	7
1.6 Methods	8
1.7 Significance	9
1.8 Structure of Dissertation	11
Chapter 2: Literature Review	13
2.1 The Mentoring Relationship	15
2.1.1 Social Context and Mentoring	19
2.1.2 Mentoring Best Practices	21
2.2 Information Practices	23
2.2.1 Individual Information Seeking	24
2.2.2 Information Sharing	29
2.3 Prior Work	30
2.4 Theoretical Framework	33
2.4.1 Mentoring Information Exchange Model	36
2.4.2 Aspects of Mentoring Practice	41
Chapter 3: Methods	43
3.1 Problem Statement	44
3.2 Objectives	44
3.3 Research Questions	45
3.4 Research Paradigm	45
3.4.1 Participant Recruitment	50
3.4.2 Data Collection	51

3.4.3 Design of Data Collection Instruments	52
3.5 Data Analysis	65
3.6 Verification and Validity	68
3.7 Ethical Considerations	70
Chapter 4: Findings.....	72
4.1 Introduction	72
4.2 Survey Participants	73
4.3 Diary Participants	75
4.4 Qualitative Data.....	77
4.4.1 Characteristics of Information Practices.....	78
4.4.2 Utility of Information Practices (RQ 2)	91
4.4.3 Change in Information Practices Over Time (RQ 3).....	94
4.4.4 Influence of Social Context on Information Practice (RQ 4)....	97
4.5 Quantitative Data	100
4.5.1 Mentoring Relationship	100
4.5.2 Meeting Frequency	102
4.5.3 Topics Discussed	103
4.5.4 Diarist Responses to Reflection Topics	108
4.6 Conclusion	109
Chapter 5: Discussion	113
5.1 Recapitulation of Findings	114
5.1.1 The Mentoring Relationship	115
5.1.2 Mentoring Best Practices	119
5.1.3 Information Practices of Mentoring.....	121
5.2 Support for Framework	124
5.3 Limitations	125
Chapter 6: Conclusion.....	130
6.1 Practical Implications.....	130
6.2 Contributions.....	133
6.2.1 Theoretical Contributions.....	133
6.2.2 Methodological Contributions	134
6.2.3 Practical Contributions	135
6.3 Suggestions for Future Research	137
6.4 Concluding Remarks	138
Appendices	142
Appendix A: Email to Faculty Mentoring Participants	142
Appendix B: Survey of Faculty Mentoring Participants.....	144

Appendix C: About the Information Diary	149
Appendix D: Codebook Used for Analysis of Qualitative Data	155
Appendix E: Comparison of “Other” Topic Categories entered by Survey Participants	161
References	163

List of Tables

Table 1: Connection of Research Questions to Data Collection Instruments	67
Table 2: Race / Ethnicity of Respondents, Compared with Sample Frame	75
Table 3: Frequency of Diary Reflection Prompts.....	109

List of Figures

Figure 1: Mentoring Information Practices Over Time	11
Figure 2: Social Contexts in Faculty Mentoring	21
Figure 3: Taylor's (1968) Model of Question Negotiation (adapted).....	26
Figure 4: Role Models of Mentoring.....	31
Figure 5: Social Contexts Influencing Mentoring	34
Figure 6: Changes in the Mentoring Relationship	35
Figure 7: Dimensions of Mentoring Information Exchange.....	38
Figure 8: Mentoring Information Exchange Model.....	39
Figure 9: Embedded Mixed-Methods Design (adapted).....	48
Figure 10: Mentoring Information Diary Form	61
Figure 11: Mentoring Information Diary Partner Information	62
Figure 12: Comparison of Meeting Frequency, as reported by Mentees and Mentors.....	103
Figure 13: Comparison of topics discussed by mentees and mentors ..	105
Figure 14: Topic Choices in the Information Diary	107
Figure 15: Information Classes of Topic Entries.....	108

Chapter 1: Introduction

Mentoring is almost a commonplace in higher education now, as American universities work to retain talented faculty, to improve diversity, and to preserve intellectual capital. The benefits of mentoring are clear, as mentored workers are generally more satisfied, more committed to the organization, and more likely to remain with an organization (Xu & Payne, 2014). With effective mentoring, new faculty are supported through the tenure and promotion process, and retention of faculty from under-represented minority groups is likely to be improved. The successful mentoring partnership involves growth and commitment from both mentor and mentee, as they work together to build and sustain a relationship.

However, the mentoring taking place on college campuses is not always as beneficial as it could be, with problems in several areas. Mentor and mentee need to develop and share an understanding of what their mentoring partnership will involve, but they are often unsure of how to approach the mentoring partnership. The chances are good that each of them learned about mentoring only by experiencing it. In many cases, that is perfectly fine. However, some people engage in mentoring in a very limited way. Others have had bad experiences with mentoring. If that is what they know, that is what they may pass on to others.

Mentoring, or the dynamic and situated information exchange between an experienced, knowledgeable individual, and one who is less experienced and less knowledgeable (e.g., Higgins & Kram, 2001; Xu & Payne, 2014), has long been recognized as an important tool for professional development and the socialization of new group members. Because so much of mentoring takes place in the privacy of the meeting between mentor and mentee, mentoring is difficult to study or even to define (Haggard, Dougherty, Turban, & Wilbanks, 2011). However, there are some elements of mentoring practice that are constant, such as information transfer between mentor and mentee. By studying the information practices of mentoring – that is, the information seeking and sharing in a social context (Savolainen, 2007) – I have identified certain constants of the mentoring relationship, and thus can suggest a new way to describe mentoring.

When I began this research, my focus tended to rest with the mentee, perhaps because I have been the recipient of mentoring on several occasions – some good and some less so – and so I find it easier to imagine the circumstances of the mentee. However, over the course of two previous studies, I have come to realize that it is not much easier to be a mentor than to be a mentee. You may be a tenured professor whose lab has never stopped producing, who has earned every accolade your university has to offer, who has given a hundred invited talks in the last five years – but

none of those things makes it easier to talk with a new mentee if you are subject to shyness. None of those things will help you if you are asked to mentor someone who is also hard to get to know.

As a researcher, my goal has been to identify the characteristics of the mentoring relationship: the information exchanges which I consider to be the atoms of mentoring information practices. I seek to understand mentoring better, because the process of mentoring can seem mysterious to anyone who has a hard time getting to know others. With a better understanding of the process, we can describe it in such a way that anyone with good intentions may expect to be reasonably successful at it; better understanding will allow us to identify the elements of good mentoring, and that will make it easier to train people to be good mentors. I suggest that the promise of improvement lies with the mentor, in that while the mentee grows and changes – hopefully from assistant professor to associate professor – the mentor is a constant, continuing his or her mentoring functions in the way that seems most appropriate. While the mentee may experience mentoring differently with this mentor than with the last, the mentor is likely providing those mentoring functions just as he or she did with the previous mentee. However, there may be opportunities for that mentor to improve. Where the mentor improves, the mentees with whom he or she works will likely have an improved experience of mentoring.

1.1 Problem Statement

In many essential professions, such as education and medicine, expertise is contextual and dynamic, to the extent that it cannot be effectively transferred through traditional means. Instead, mentors facilitate the development of expertise in an individual who is new to the profession, through a combination of the mentor's technical knowledge, past experience, and understanding of the developing professional's situation, based on the mentor's own experiences. However, mentoring is not as reliable as it might be (Eby, Butts, Durley, & Ragins, 2010), in part because mentoring is so variable, from one industry or discipline to the next, from one mentoring dyad to the next, and from one mentoring dyad this month to the same dyad next month (Weinberg & Lankau, 2011). A second problem is that mentoring is closely associated with the individuality of its participants, meaning positive effects experienced by participants cannot be definitively linked to their mentoring engagement. Because causality cannot be established, mentoring programs do not receive the level of organizational support that they otherwise might, though greater organizational support would likely improve outcomes for mentoring participants (Donnelly & McSweeney, 2011; Finkelstein & Poteet, 2007; Fornari et al., 2014). In the face of all this variability, we acknowledge that only one aspect of mentoring is truly constant – the exchange of information. However, mentoring has never been studied from this

perspective. Studying the information practices of mentoring can create a more explicit definition of the process, and thus would be useful to organizations seeking to develop and extend formal mentoring programs, as well as to those mentoring participants for whom training would be a benefit. This research combines existing theory and scholarship on formal mentoring best practices, the common phases and outcomes for mentoring dyads, and the concept of information practices to create a new understanding of the process of mentoring, including the nature and quantity of information exchanged between the mentoring participants, how the information exchange varies over time, and how mentoring participants perceive that their social context influences their information practices.

1.2 Rationale

Formal mentoring programs are considered in this study because these programs create a context where mentor and mentee may be easily located, in the sense that they were likely to have been matched together as a part of the formal mentoring program. In addition, the timeline of the mentoring relationship is likely to be accelerated in a formal mentoring program, perhaps improving the chance that a longitudinal study may capture some of the more significant moments of the relationship. Finally, an individual participant in formal mentoring may have the same goals and expectations as other participants in the same mentoring program,

since such goals and expectations may be defined in advance by the administrators of the program, rather than by the participants themselves. Formal mentoring is of increasing concern to organizations that seek to improve diversity and retain or increase intellectual capital (Borredon & Ingham, 2005). While informal mentoring continues, organizations emphasize formal mentoring so that participants are more likely to receive similar experiences, and so there is some assurance that everyone who needs mentoring has access to it.

This study examined formal mentoring among higher education faculty because formal mentoring can be a valuable tool for improving faculty diversity and retaining young faculty who might otherwise leave education. In addition, policy at the university under study is that mentors will be appointed for all tenure-track faculty (~300). Thus, there is a large pool of potential study participants with experiences of mentoring that are similar in some ways, but widely varying in others.

1.3 Goals of the Study

The goals of this study were 1) to examine the information practices associated with mentoring across the dimensions of topic, information class (e.g., detail/fact, interpretation, reassurance), and frequency; 2) to investigate how mentoring information practices vary by mentoring relationship and over time; and 3) to identify to what extent and in what

ways mentoring information practices are perceived by mentors and mentees as useful.

1.4 Research Questions

The research questions that guided this study are:

1. What are the characteristics of the information practices of mentors and mentees?
2. How do mentoring participants perceive the utility of their information practices?
3. How do mentoring information practices and participant perceptions of those practices change over time, as the mentoring relationship progresses?
4. How do mentoring participants perceive the ways that their social context encourages or constrains mentoring information exchanges, the mentoring process in general, and how do those perceptions change over time?

1.5 Theoretical Framework

The theoretical framework that informs this study was constructed from a synthesis of mentoring theory and information practice theory. Mentoring theory describes the process that mentor and mentee engage in, as well as describing the way the process is likely to change over time. Information practice theory describes the interaction between information

behavior and social context. Mentoring participants are engaging in information seeking and sharing, with each other and with others. Further, mentoring participants create a social context, and operate within a social context created by the organization that sponsors or otherwise encourages their mentoring activities. Therefore, the information seeking and sharing in which mentoring participants engage is aptly represented by information practice theory, or information seeking and sharing in a social context (Savolainen, 2007). The theoretical framework informing this study represents the intersection of the mentoring process with the information practices involved in mentoring. This framework will be described in greater depth in Section 2.4, below.

1.6 Methods

This study had two phases: a survey of faculty mentoring participants at Mid-Atlantic University (MAU), and a diary of information practices, which survey respondents were invited to complete. This study built on earlier work in which I investigated the information seeking behaviors of faculty mentees (Follman, 2013), and examined the information practices of faculty mentors (Follman, 2015).

The survey of mentoring participants was designed to assess the variety of information practices that a faculty mentoring participant engages in, whether the faculty member is acting as mentor or mentee. The survey also included open-ended questions designed to gather the

mentoring participant's attitude toward the process. At the conclusion of the survey, faculty were invited to complete the information diary.

The information diary is an online tool where faculty can rapidly record the information practices of their mentoring, in real time. Using the information diary tool, the faculty member can list and categorize mentoring information exchanges by topic (e.g., tenure or research), information class (e.g., detail / fact or interpretation), and other dimensions, as those information exchanges occur. The diary also gives participants an opportunity to reflect on the mentoring meeting as a whole. Thus, through the diary I was able to gather data about mentoring information practices over time.

I reviewed and did initial analysis of diary entries as they were made. Data analysis was conducted in real time, immediately after the survey closed, and as diary entries were created. In order to identify patterns of interest, data was analyzed across participants, but also across characteristics of the mentoring dyad, such as mentoring phase, and across the relative experience of the mentoring participants.

1.7 Significance

The theoretical significance of this research derives from its development of the mentoring information exchange framework, and application of the same to the information practices associated with mentoring, as well as the examination of how those information practices

change over time. The methodological significance of this research lies in the development of a tool to gather data through online diary entries. The practical significance of this research stems from the fact that through investigation of the information practices associated with mentoring, we can describe the mentoring relationship in a way that is less contextual and more objective. That will facilitate the training of mentors and mentees, as well as the articulation of goals and expectations for formal mentoring. Our understanding of the information practices of mentoring means we will be able to map the likely progress of the mentoring relationship, including quantity of information exchanges, topics, and information classes. As depicted in Figure 1, below, the mentoring relationship is a process that involves mentoring information exchange to a greater or lesser extent, depending on the phase of the relationship. In the context of this study, those relationship phases involve passing through the tenure review process and achieving tenure. The information practices of the mentoring relationship are also influenced by the actions taken in the unit to foster mentoring – that is, by the social context in which the mentoring takes place. Finally, the information exchanges involve varying topics and classes of information. Not pictured in Figure 1 is the idea that some topics are addressed multiple times in the mentoring process, while others may only be addressed a single time.

THE MENTORING PROCESS

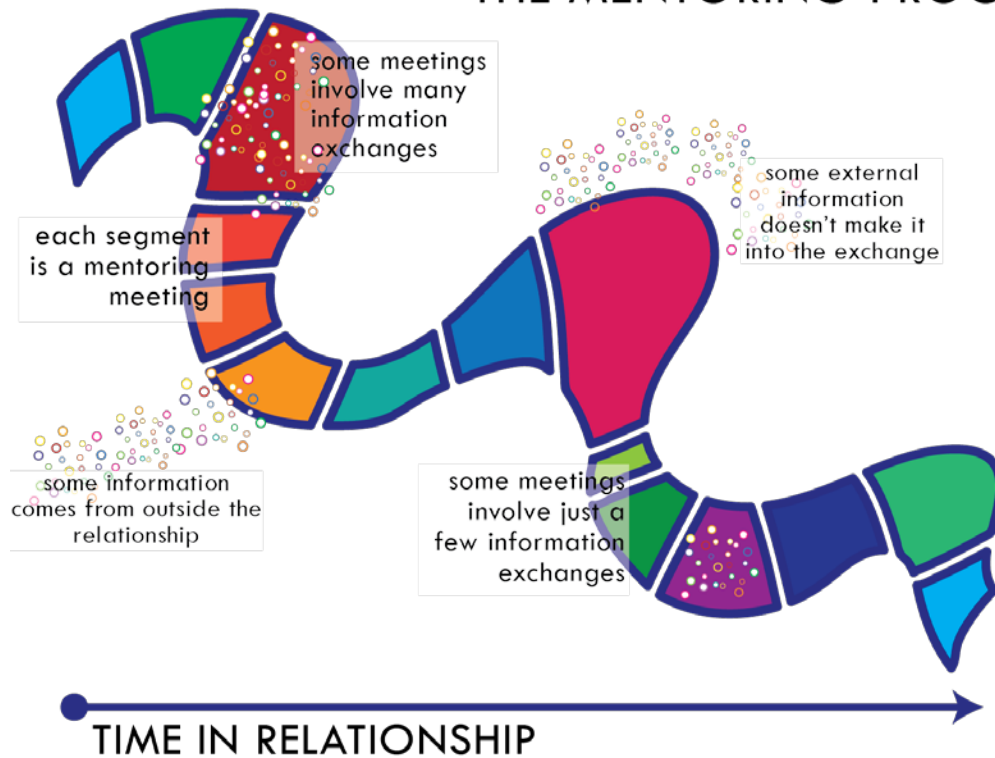


Figure 1: Mentoring Information Practices Over Time

1.8 Structure of Dissertation

This chapter describes the research problem that I addressed, as well as summarizing the methods I used to complete the study. In Chapter Two, I review relevant literature on mentoring theory and information practices. I also explain the theoretical framework that informs and shapes my study. Chapter Three describes the research methods I employed as I conducted the study, including the data collection instruments, data analysis processes, and the mixed-methods research paradigm within which this research was conducted. Chapter Four summarizes the data

collected, while Chapter Five discusses the significance of the data. Finally, Chapter Six offers some conclusions and suggestions for future work.

Chapter 2: Literature Review

This literature review will focus on two main areas of scholarship: studies of the mentoring relationship, and studies and theory regarding information practices. It is essential to understand the mentoring relationship because that relationship has a significant impact on the nature of the information exchanged in the dyad. The mentoring relationship is also influenced by its social context, which may motivate or discourage the information practices of the dyad. Finally, the mentoring relationship is influenced by each participant's previous experiences of mentoring, since there are few other ways to learn how to be a mentor or mentee, besides doing it.

Studies of mentoring generally distinguish between informal mentoring, where mentor and mentee meet and form a relationship independent of outside influence, and formal mentoring, where aspects of the mentoring relationship are determined by the organization sponsoring the mentoring (Allen, Eby, & Lentz, 2006b; Baugh & Fagenson-Eland, 2007; Jackevicius et al., 2014). Since the mentoring relationship seems to proceed in the same way following initiation, no matter whether the mentoring is formal or informal, this literature review does not consider studies that compare aspects of formal mentoring to aspects of informal mentoring. The focus here is on what happens after mentor and mentee have formed a mentoring relationship, or mentoring dyad. Also included in the review is a

discussion of studies describing mentoring best practices. Though most of these studies focus on the organization sponsoring the formal mentoring, rather than the individuals engaged in the mentoring process, the actions of the sponsoring organization have a powerful effect on the social context in which the mentoring takes place.

Scholarship in the area of information practices offers several interesting aspects for closer consideration of the information exchanges in the mentoring relationship. Following a brief precis of the essential concepts of information practices, this review will consider studies that focus on the individual who experiences the information need, studies that describe or characterize the actual information involved in an information exchange, and studies that evaluate the influence of social context on information exchange as well as the ways that social context influences the understanding of information. Next, I will review my prior work on the information behaviors and practices associated with mentoring.

The literature review concludes with a description of the theoretical framework I propose, which synthesizes elements of mentoring theory and the concept of information practices. Using mentoring theory, I define certain boundaries and characteristics for the mentoring relationship. Then, the concept of information practice allows me to describe a central element of the mentoring relationship, involving the information

exchanged between the mentoring partners. The study was constructed on this theoretical framework.

2.1 The Mentoring Relationship

Mentoring has been an object of study since the late 1970s. In early studies, scholars identified different dimensions of mentoring, such as career functions and psychosocial functions, that were characterized by the mentoring practices engaged in by participants (e.g., Kram, 1983). Mentors were perceived to provide career functions that helped the mentee develop within the organization, and psychosocial functions to enhance the mentee's growth and self-efficacy (Ragins & Kram, 2007, p. 5). However, these studies generally focused on the mentoring functions experienced by participants, or the participants' perceived satisfaction with their mentoring. There was no way to assess the actions taken within the mentoring relationship; to determine how those actions influenced the perception of mentoring functions. In the early stages of mentoring scholarship, there was less attention to the relationship aspects of mentoring. Without careful consideration of the mentoring relationship, there could be no clear definition of mentoring, since mentoring varies as the relationship varies. For the purposes of this study, I used the following definition, chosen for its emphasis on mentoring as a process, as well as the inclusion of informality in the information exchange:

A process for the informal transmission of knowledge, social capital, and psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face to face and during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less (the protégé) (Bozeman & Feeney, 2007, p. 731).

It should be noted that this description of the transmission of knowledge as ‘informal’ is not an explicit reference to informal mentoring, but rather a characterization of the information practices involved in mentoring. This informal transmission of knowledge is as likely to take place in the context of formal mentoring as in that of informal mentoring.

Mentoring has been identified as involving four phases, identified as 1) initiation, when the relationship begins, 2) cultivation, when the relationship reaches its fullest potential, 3) separation, when the mentoring relationship is altered by both social context and psychological changes in one or both of the mentoring partners, and 4) redefinition, when the relationship evolves into something different from its previous form, or ends altogether (Kram, 1983). Recognition of these phases emphasizes the dynamic nature of the mentoring relationship. However, new tools and frameworks have led scholars to consider mentoring more as a

developmental relationship (E. C. Carey & Weissman, 2010; Chandler, Kram, & Yip, 2011), and to emphasize the developmental aspect of mentoring functions (Higgins & Kram, 2001; W. Smith, Howard, & Harrington, 2005). While this dynamic, developmental understanding of mentoring adds to the challenge of studying the mentoring process, it also more effectively represents the actual process, whereby the relationship grows until mentor and mentee find themselves more as equals and friends, offering developmental support to each other, rather than the more hierarchical mentor and mentee.

It is valuable to consider how mentors and mentees are influenced by their previous experiences of mentoring. Training for mentors and mentees is not as common as it should be, so it seems that the only way to learn to be a mentor is by experiencing it as a mentee and making one's own choices about what works and what doesn't. This idea of mentoring based on previous experience may be referred to as a mentoring schema (Chandler et al., 2011). A mentor or mentee's attitude toward the mentoring relationship is likely to be strongly influenced by such a schema. Studies have also been completed to identify the personality characteristics, such as job involvement, focus on career planning, and locus of control, of successful mentors and mentees (Noe, 1988; Pisimisi & Ioannides, 2005). However, all these studies are constrained by the black box of mentoring:

the fact that so much of what takes place happens in privacy between the mentor and mentee (Lankau & Scandura, 2007).

Another way to examine and represent the functions of the mentoring relationship is to describe mentoring as a community of practice (CoP), as some have done (E. R. Smith, Calderwood, Dohm, & Lopez, 2013). A community of practice is generally considered as a group of people who are mutually engaged in practice related to a joint enterprise, within a specific domain (Lave & Wenger, 1991; Wenger, 1998a). Based on the idea that a community of practice involves the transfer of culture, and the idea that culture is a number of shared practices, a traditional mentoring dyad would not fit this model. Two individuals do not a community make, and without the community, can there be a culture? However, as formal mentoring programs expand mentoring models with new ideas such as group mentoring and mentoring constellations (Allen, Eby, & Rhodes, 2007; Schunk & Mullen, 2013; Sorcinelli & Yun, 2007), the CoP model could be used to effectively describe the mentoring process, in part because of its emphasis on the transmission of informal, tacit information (Lave, 1991). It is also an effective model for the mentoring that takes place within an organization where everyone feels responsible for the socialization of new members, rather than leaving it to one person appointed as a mentor. A community of practice supports communal memory, and thus community members are resources for each other

(Wenger, 1998a). The CoP model is also important to mentoring because of its introduction of the influence of social context in mentoring.

2.1.1 Social Context and Mentoring

Social context may influence the mentoring relationship in a number of ways. In particular, mentoring initiated through formal programs may be influenced by expectations and goals created by the organization (Donnelly & McSweeney, 2011; Fornari et al., 2014). In addition, such mentoring will be influenced by the matching of mentoring dyads (Eby & Lockwood, 2005; Finkelstein & Poteet, 2007). Formal mentoring programs may also include evaluation of the mentoring that takes place (Finkelstein & Poteet, 2007; Guise, Nagel, & Regensteiner, 2012). In the context of higher education, social context influences attitudes toward mentoring, such as to what degree it is acceptable for a mentor and mentee to collaborate on research.

Social context is also expressed by the disciplinary paradigm (Kuhn, 2012), in the sense that some disciplines comprise two or three areas where scholarship overlaps, while others may include many more sub-disciplines, each with its own independent epistemology and methodology. A mentor in a discipline of the former group might be able to provide mentoring to a faculty member who was working in a different area, because of the disciplinary overlap. In a discipline of the latter group, the mentor might

find herself able to comment only on generalities, because the mentee's sub-discipline is so much at variance with the mentor's.

An additional aspect of social context in mentoring is created by the mentoring partners as they work together. As reflected in Figure 2, each of the partners has a level of previous experience with the process that contributes to his or her mentoring schema (Chandler et al., 2011), or mental picture of how the mentoring should work. This mental picture strongly influences the mentoring participant's expectations of the mentoring partner. Further, the social context created by the mentoring partners is likely to change over time as mentor and mentee work together and build a relationship.

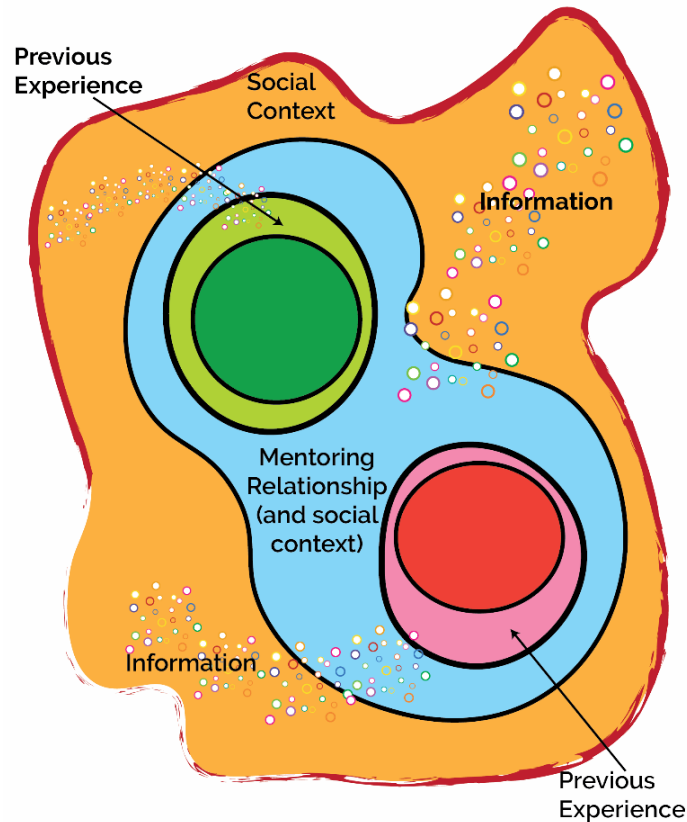


Figure 2: Social Contexts in Faculty Mentoring

Thus, the mentoring participant's previous experience has an impact on how he or she experiences mentoring in the present relationship. The social context created by the mentoring relationship also impacts the information exchanges between the mentoring partners, as does the context created by the unit, represented by the larger outline around the mentoring relationship.

2.1.2 Mentoring Best Practices

Another area of mentoring scholarship involves recommendations about best practices for formal mentoring programs. These

recommendations are rarely supported by empirical research (Finkelstein & Poteet, 2007), but it might be said that they meet the ‘common sense’ test, particularly in consideration of social context. After all, organizational culture has a significant impact on the social context in which mentoring takes place. There may also be information seeking and sharing between the organization and the mentoring participants.

Organizational support of mentoring, taking a number of forms, is recommended as best practice in several studies and commentaries (e.g., Finkelstein & Poteet, 2007; Guise et al., 2012; Parise & Forret, 2008). The presence of a clear organizational commitment to mentoring is a strong predictor of positive perceptions of mentoring programs (Guise et al., 2012), and those perceptions predict the likelihood of participants continuing in the program (Allen et al., 2006b; Parise & Forret, 2008). One aspect of organizational commitment is in the development of goals and expectations for the mentoring program, which may be linked to professional development goals for the organization (Dawson, 2014). Providing time for mentoring is another element of organizational best practices, as well as offering compensation and/or recognition to the mentor (Donnelly & McSweeney, 2011; Finkelstein & Poteet, 2007; Guise et al., 2012). Several studies refer to the importance of recruitment and training of mentors (Allen et al., 2006b; Dawson, 2014), and even greater emphasis is given to the process of matching mentor and mentee (Chandler

et al., 2011; Eby & Lockwood, 2005; Weinberg & Lankau, 2011). It is recommended that mentor participation should be voluntary, because of the level of effort and commitment required to be effective (Donnelly & McSweeney, 2011) and because voluntary mentors are likely to experience greater motivation and satisfaction with their mentoring activities (Allen, Eby, & Lentz, 2006a). Both mentor and mentee should have input to the matching process, according to several studies (Eby & Lockwood, 2005). There is no clear consensus on whether mentor and mentee should be matched according to their similarities or according to their differences; what is most emphasized is that mentor and mentee find an element of connection on which to build their relationship, or it is likely to disintegrate rapidly (Swap, Leonard, Shields, & Abrams, 2001; Weinberg & Lankau, 2011). As noted above, mentor and mentee create a micro social context between them, and the organization sponsoring the formal mentoring creates a meso social context. A better understanding of the interaction between the social context of mentoring and the relationship between mentor and mentee is a useful connection between mentoring scholarship and the studies of information practices, which also consider social context.

2.2 Information Practices

As noted in Bozeman & Feeney's definition quoted above, central to mentoring is the "informal transmission of knowledge, social capital, and

psychosocial support” (2007). The process of transmission of knowledge, social capital, and support is essentially an information practice. A number of theories from studies of information behavior can help us to understand the information practices of mentoring. While information behavior studies have often focused on the nature of the information in question, or on the behavior of the individual, in recent years there has been more attention given to information seeking and sharing within a social context. That is, scholars have acknowledged that individuals do not experience information needs in a vacuum. The manner by which an individual’s information need is mediated by social context is of particular interest to this study, as I consider that a faculty member’s academic unit can create or contribute to a social context which can facilitate or impede mentoring information exchanges.

This review begins with a summary of scholarship regarding the information seeking and sharing of individuals and then continues with a discussion of theories of information practices, which include consideration of social context. Finally, these theories and models will be synthesized into a theoretical framework to show how they can describe the information practices of mentoring.

2.2.1 Individual Information Seeking

Early studies of information often examined the best ways to match documents – or information – to the user’s need. Scholars worked from the

conceptual model that a user's information need could be satisfied by a single document (Bates, 2002). Thus, these scholars were looking for theories that could predict or measure the relevance of a document to the user. Such studies focused more on the characteristics of the document than on the information need expressed by the user (Dervin, 1976). This representation of the nature of information and information needs reflected a classicist / positivist view of information, in which information or knowledge can be broken down into discrete chunks of data, there are absolute answers to every question, and information remains unchanged as it is transferred from one individual to another. However, later constructivist or sense-making studies acknowledged that an individual's information need is dynamic (Dervin & Nilan, 1986). The individual's information need changes as he or she works to articulate it (Taylor, 1968), or as more is learned about the topic (Bates, 1989). Information is understood differently by different individuals, and thus, what constitutes information is highly perceptual, contextual, and even temporal (Bates, 1979; Dervin, 2003; Kuhlthau, 1991). Information may be defined as just whatever helps (Harris & Dewdney, 1994, p. 19).

Several models of individual information seeking exemplify the emphasis on the information user, rather than the information itself. These models, and the theoretical constructs behind them, create a foundation for the definition of information practices. The earliest model of use in this

context is Taylor's model of Question Negotiation (1968), which was derived from a study of how reference librarians get information from the user about what he or she needs help with. Taylor characterized the user's information need as a "description of doubt" (1968, p. 179), rather than a single event.

Significant in Taylor's study is the understanding

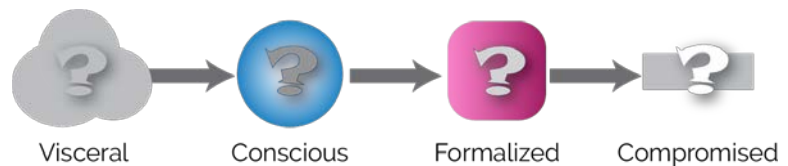


Figure 3: Taylor's (1968) Model of Question Negotiation (adapted)

that the seeker

may not know exactly what the question is, and thus, may not know exactly what is required to answer that question. As depicted in Figure 3, Taylor identified four phases of information need: visceral, or unexpressed; conscious, or a mental description of the area of doubt or indecision; formalized, a qualified, rational statement of the question; and compromised, a question expressed in terms of what the user thinks the system can deliver.

When the user is working with another individual to find the information, such as a librarian, the compromised information need is often the only one to be expressed, though it is the conscious need where the librarian, or other person assisting with the information seeking, begins to work. According to Taylor, the librarian must be able to walk the information user back to the point of the conscious need, in order to

develop a search strategy, or provide the information the user needs. If the information user has a good relationship with the librarian, this process of identifying the conscious need may well be more successful than if the information user is constrained by affective barriers or if the librarian is not expert at interrogating the information user.

Another useful model related to information seeking is the idea of the Anomalous State of Knowledge (ASK) (Belkin, Oddy, & Brooks, 1982). This model describes an individual's motivation to seek information. The recognition of the anomaly in the individual's knowledge state is what causes the information need to form (Cole, Leide, & Beheshti, 2005). The ASK is based on the cognitive view, or the idea that any processing of information is mediated by an individual's system of categories or concepts which themselves form a model of the world (Belkin, 2009). If information provided to the individual does not conform to the paradigm or discourse that she inhabits, that information might be mistrusted or even rejected outright. Further, the ASK model emphasizes that information seeking can involve a process of interrogation and interpretation; it is not a simple or direct process.

The Information Search Process (ISP) model (Kuhlthau, 2005) is more explicitly focused on information seeking to complete a task than either of the previous models. Kuhlthau's model describes information seeking as a process with six stages: initiation, selection, exploration, formulation,

collection, and presentation, after which the seeker moves on to make use of the information. Helpfully, the ISP model also emphasizes the uncertainty of information seeking. Indeed, Kuhlthau says that uncertainty is central to the model (Kuhlthau, 2008). At different stages of information seeking, the individual may experience different moods. For example, an individual in the invitational mood is open to new ideas. On the other hand, the indicative mood describes an individual moving toward conclusive actions (Kuhlthau, 2004, p. 98).

Kuhlthau also describes a zone of intervention, based on the concept of a zone of proximal development (Vygotsky & Kozulin, 2011). This zone of intervention is the area where the information seeker may be assisted most successfully. However, intervention outside the zone may be perceived to be “intrusive” or “overwhelming” (Kuhlthau, 2005, p. 233).

The models described above emphasize the idea that an information need is not a one-dimensional intersection between information and user, but rather a dynamic, evolving process. Understanding the information need as a process means we can recognize the ways that social context influences an individual’s information needs, as well as considering how social context fosters or constrains information sources for that individual. These models are also helpful in understanding the practices of individuals whose information sources are generally not documents, but rather other individuals.

2.2.2 Information Sharing

Information sharing is the necessary other side of information practices within a pair or group of individuals. Cognitive studies of information seeking emphasize the individual's quest for a particular document which holds the answer to his query. However, it is often the case that the source of information an individual needs may well be another individual, rather than a document. That individual, the information source, holds various attitudes about information sharing that may serve as barriers or motivations to share information. In academic communities, for example, information sharing may be a way to maximize efficiency in a research group, or it may be a relationship- and community-building activity (Talja, 2002). Talja (2002) identifies a typology of the sharing of information that includes super-sharers, sharers, occasional sharers, and nonsharers. It is also valuable to classify information sharing according to the type of information shared, which might extend from objective information to the ways that individuals become informed or instructed (Dervin, 1976). Essentially, the information sharer may focus on the transmission of information, or on instruction and practice on how to become informed (Dervin, 1976). The communication act of sharing information may also be classified as information transmission, or it may be classified as ritual view, in which what is communicated represents shared beliefs and may be thought of as community building (J. W. Carey,

1989). Information sharing may also be examined through a framework that considers the situation of the sharing, the types of information shared or not shared, the motivation for sharing information, and strategies for sharing information (Almehmadi, Hepworth, & Maynard, 2014). Studies of information sharing have also employed a number of different frameworks – such as the idea of common ground, where individuals have mutual beliefs and shared interests, constituting the grounds for information sharing – to characterize the activities involved (Pilerot, 2012). What these different models have in common is an emphasis on the influence of social context on the way an individual shares information, as well as on the types of information that individual shares. Thus, it becomes essential to consider the information sharing as a social practice, where individuals use language as an ensemble (Monk, 2008). These frameworks emphasize that information exchange between two or more people – or information practices – can involve a host of factors that can encourage or discourage the exchange.

2.3 Prior Work

I have completed two other studies of the information behaviors and information practices of faculty mentors and mentees, addressing significant gaps in the literature. The first study was an examination of the information behaviors of faculty mentees (Follman, 2013). Among the findings, the study demonstrates that mentees experience a number of

barriers and motivations in their information seeking. Often, a faculty mentee is not sure of what it is that he or she needs to ask, so for a successful mentoring information exchange, there should be a more relaxed atmosphere which makes it possible to change the subject or wander off topic. However, mentees perceive themselves to be in a profession which values clear thinking and direct speech, making it difficult to engage in the kind of unstructured information seeking that they may find to be more helpful.

The second completed study is my first examination of the information practices of faculty mentors (Follman, 2015). Data from this study suggest that faculty mentors enact certain roles in their mentoring

relationships, defined as the reference resource, the guide to culture, and the advocate, as shown in Figure 4. These roles describe the mentoring functions that the faculty mentor provides, as well as suggesting the information seeking and sharing that the mentor will undertake while

occupying the role (2015, p. 3). For example, the reference resource

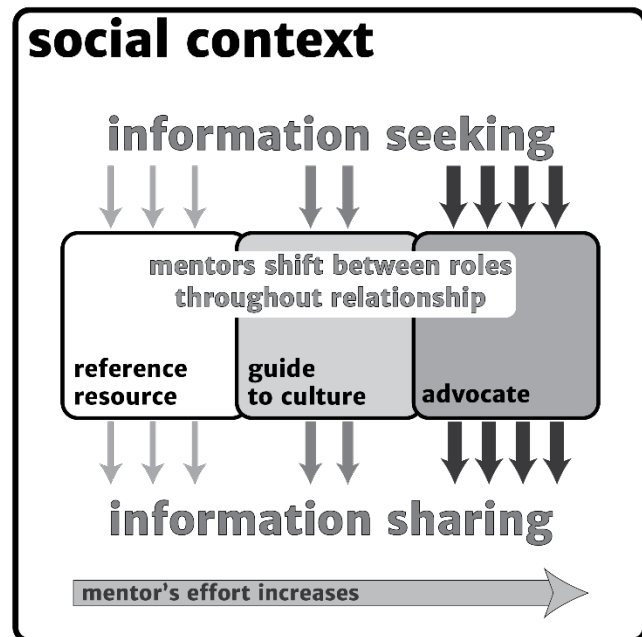


Figure 4: Role Models of Mentoring

generally focuses on questions that are more procedural and factual than interpretative, and that can be answered either from the mentor's direct knowledge, or by review of resources such as university policy. The reference resource mentor's information sharing is more reactive than proactive. The guide to culture is a mentor who is willing to explain departmental or college politics or to give the mentee advice about how to frame a research proposal on a grant application. The mentor in this role may share information reactively or proactively, depending on context. Finally, the advocate is a mentor who is willing to spend much more time in support of his or her mentee. The advocate may need to seek information in order to fulfill his or her mentoring responsibilities. The advocate is likely to share information proactively.

As suggested by the width of the arrows connecting information seeking and information sharing to the roles in Figure 4, a mentor who is occupying the role of advocate is likely to be both seeking and sharing information that is richer and of greater quantity than the mentor who is occupying the role of reference resource. Furthermore, the information seeking and sharing undertaken by the mentor takes place within a feedback loop (not pictured), as the mentee reacts to information shared and new information needs become apparent.

2.4 Theoretical Framework

Given the connection between individual information seeking or sharing and the multiple levels of social context (e.g., micro, meso, or macro) mediating that information seeking and sharing, I propose the theoretical framework detailed below, which synthesizes elements of mentoring theory and the concept of information practices. Based on mentoring theory (e.g., Chandler et al., 2011; Kram, 1983), I have defined certain boundaries and characteristics for the mentoring relationship. And based on the theory of information practices (Savolainen, 2007), I have defined a central element of the mentoring relationship, which is the information exchanged between the mentoring partners.

At the most basic level, mentor and mentee have a relationship with each other – a micro social context that informs the way they exchange information, as well as the type of information they exchange. However, the mentoring information exchanges between the mentoring partners are also informed by the department or other organization that sponsors or encourages the mentoring – the meso social context. Finally, mentoring information exchanges between the mentoring partners are informed by the scholarly discipline of the partners, or perhaps by the larger university community – the macro social context (Haggard & Turban, 2012). The progression of social context is shown in Figure 5, below.

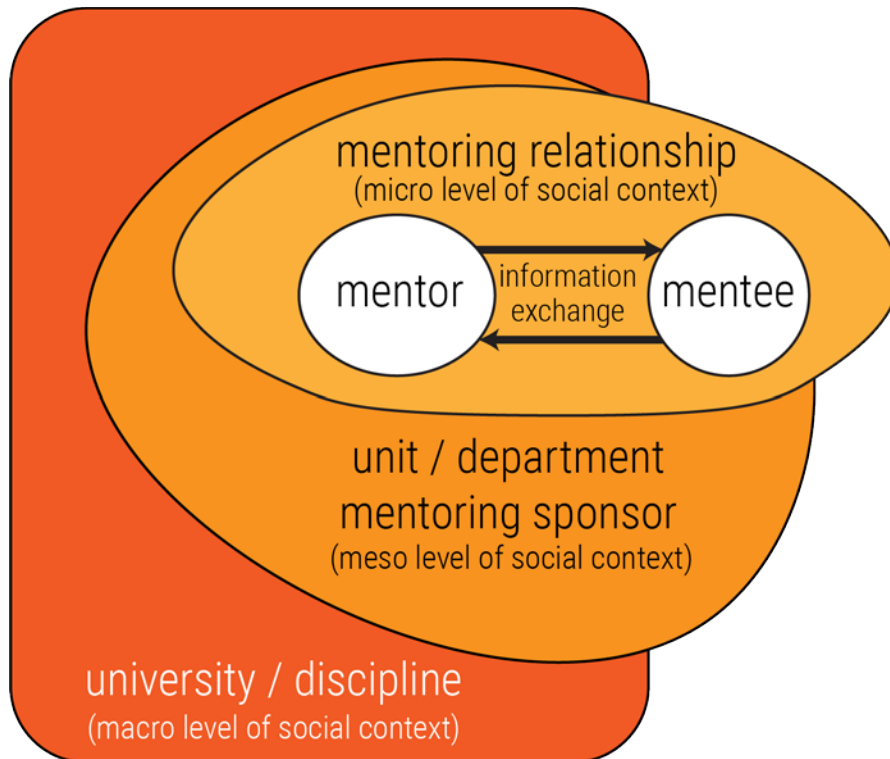


Figure 5: Social Contexts Influencing Mentoring

Mentoring theory suggests that there are certain standard aspects of the mentoring process, but realistically, little is standard in mentoring. For example, theory describes the relationship between mentor and mentee as passing through certain phases, such as the initiation phase or the cultivation phase (Kram, 1983). While these phases are useful for characterizing the relationship between mentoring partners (e.g., the initiation phase is a time when the partners are working to get to know each other), the idea of a phase suggests that the relationship between mentoring partners will remain static during that phase. However, given the nature of human interaction, the mentoring relationship continues to

change within the phases, rather than remaining static (Kalbfleisch, 2007). That is to say, when a faculty member is assigned to serve as the mentor for a new assistant professor, the two are considered to be immediately in the initiation phase. However, their relationship will change from the beginning of the initiation phase, when they might be focused on getting to know each other, to the end of the initiation phase, when they might focus on determining whether they can trust each other. In addition, each of these mentoring partners might have a different experience of the initiation phase if they had a different partner. As shown in Figure 6, below, the mentoring relationship changes in different ways and at varying rates for different mentoring dyads (McGowan, Stone, & Kegan, 2007).

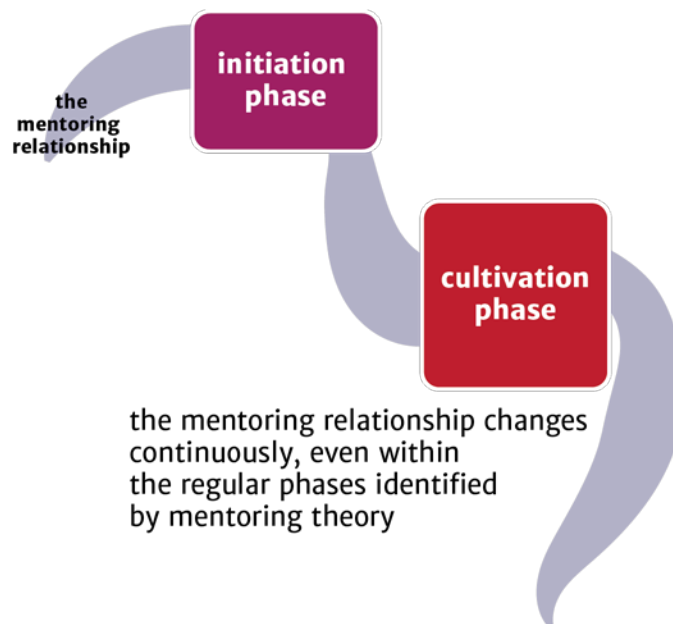


Figure 6: Changes in the Mentoring Relationship

In addition, it is common for mentors to work with more than one mentee, and it is increasingly likely for a mentee to have a team or constellation of mentors. Therefore, the mentoring partners are engaging in multiple information exchanges, with multiple other partners. Based on my earlier research, the frequency and types of these information exchanges will be different from one mentoring partner to another.

Finally, mentoring takes place over time. A single information exchange does not make the two involved parties into a mentoring dyad. Instead, mentor and mentee must interact over a period of time in order to build their mentoring relationship. Further, different mentoring partners will take different lengths of time in order to achieve the same level of function in the mentoring relationship.

2.4.1 Mentoring Information Exchange Model

Despite these variable aspects, mentoring theory does identify certain consistent elements of mentoring as a process. Mentoring is usually defined as a developmental relationship between an older, more experienced mentor and a younger, less experienced mentee (e.g., Xu & Payne, 2014). This developmental relationship necessarily involves information exchanges which may originate with either mentoring partner. These information exchanges take place over a period of time defined as the extent of the mentoring relationship – while one of the mentoring partners is helping the other to develop.

Because these information exchanges are mediated by the social context in which they take place, as noted above, the idea of information practices is implicit in the mentoring process, as defined by theory. Each of these mentoring information exchanges has several different dimensions, including:

1. Broad topic: one or two words that generally describe the topic of what was discussed
2. Detailed description: the actual discussion
3. Information class: whether the information exchanged is an objective fact, an interpretation, a statement of judgment or evaluation, a statement with affective qualities, such as reassurance, or some combination of these
4. Rhetorical act: question, answer or discussion

As depicted in Figure 7, each mentoring information exchange includes all four of the dimensions described above. Further, each mentoring partner has his or her own unique understanding of the nature of the information exchange, and the mentoring partners may not necessarily understand the information exchange in the same way (Weinberg & Lankau, 2011). Taking a constructivist view of the information exchange, we may say that each of the mentoring partners experiences a different information exchange, as they create their own meaning of the exchange (Burr, 1995).



Figure 7: Dimensions of Mentoring Information Exchange

These elements of the Mentoring Information Exchange Model are combined in Figure 8, below.

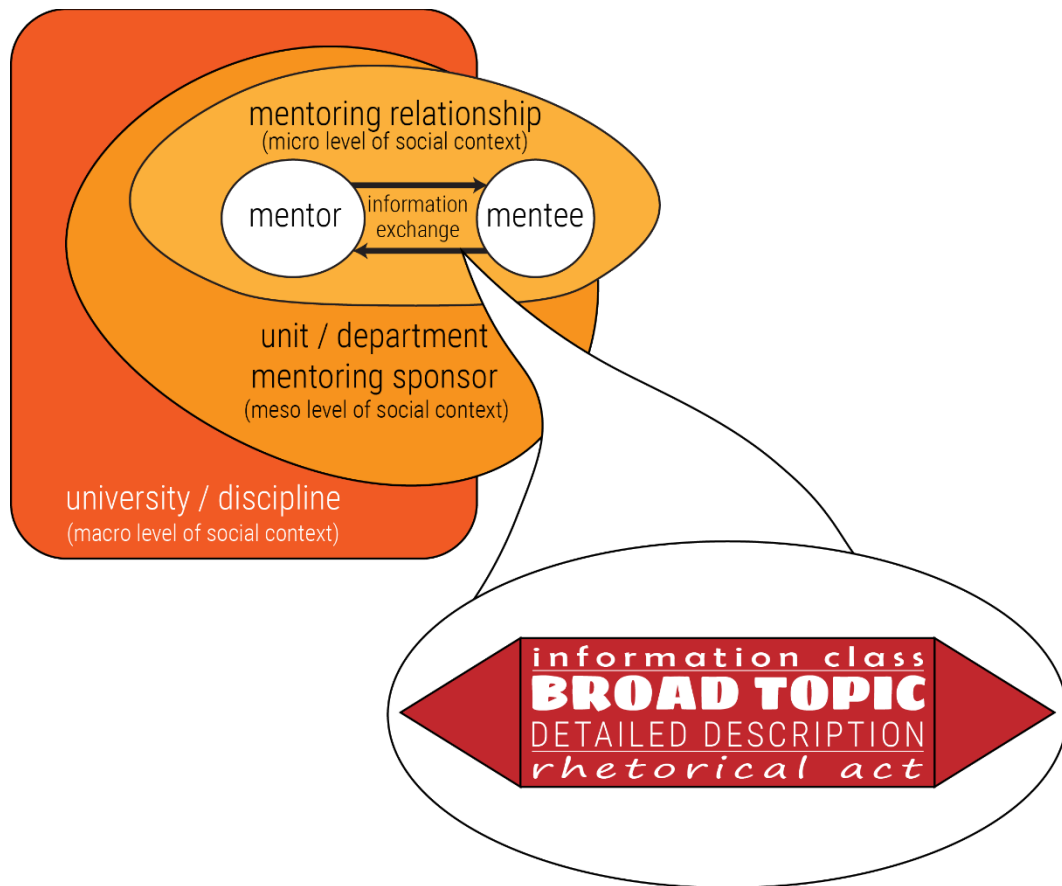


Figure 8: Mentoring Information Exchange Model

Studies of the information behaviors of faculty mentors and mentees (Follman, 2013, 2015) suggest that information exchanges will vary across the length of the relationship, so that topics of interest at one point in the relationship will not be of interest at another point, or will be addressed in a different way. Each mentoring participant will experience motivators and barriers to engage in information exchanges. These motivators and barriers are in part influenced by the individual's previous experience of mentoring (Blickle, Schneider, Meurs, & Perrewé, 2010). It is unusual for

formal mentoring in academic contexts to involve training for participants. Therefore, mentoring participants largely learn the process from their previous experiences of mentoring. If the mentee previously had a mentor who was overcommitted and reluctant to engage with the mentee, he or she might now feel a reluctance to 'bother' the mentor with questions. If the mentor previously had a mentee who needed a lot of help and support, he or she might expect the current mentee to have the same needs, and thus share more information with the mentee than the mentee really needs.

It is also the case that as individuals, both mentor and mentee have a perception of themselves as capable or incapable at seeking and/or sharing information. For example, mentors may feel reluctant to share information, because they doubt their capability. In that case, the mentor waits for the mentee to ask questions, without really considering the mentee's ability to do so. Other mentors may share more information than the mentee really needs, or may share information on topics where the mentee is not seeking information.

The individuals engaged in the mentoring process also experience motivators and barriers to information exchange that reflect the social contexts in which the mentoring takes place (McGowan et al., 2007). The academic unit may encourage mentoring meetings in a number of ways. For example, the unit head may inquire about the mentoring meetings

with either member of the mentoring dyad. This sends a clear message that mentoring is expected to take place, which in turn is likely to create a motivator for the mentor and mentee to exchange information. The social structure of the unit may also create motivations for mentoring information exchange, by creating an atmosphere of collegiality. The unit may be one where individuals regularly stop in the halls to check in on each other's work, or to see how new members of the unit are doing. In this social context, both mentor and mentee feel supported as they engage in mentoring information practices. On the other hand, the unit may be one where mentoring activities are not encouraged. This may create a barrier for the mentoring dyad in exchanging information.

2.4.2 Aspects of Mentoring Practice

As discussed above, the relationship between two mentoring partners varies across the length of the relationship. At times, there will be many mentoring information exchanges in a short period of time, while at other times, there might be just a few mentoring information exchanges. Also, the mentoring information exchange might be one that requires almost no effort on the part of the mentor, as when the question is about where to find copier paper or how to request travel funds. At other times, the mentor may be interested in sharing deep, rich information about a past experience that aligns with what the mentee is currently experiencing. In this instance, the quantity of information exchanges would be low, but

the type of information would be more interpretative, or qualitative, as the mentor shares information that is metaphorical or symbolic rather than factual. Through the evaluation of mentoring information exchanges and analysis of their variation, we develop an understanding of the process of mentoring over time. With data from multiple mentoring dyads, we can identify patterns and associate those patterns with recognizable mentoring phases, such as initiation, when the relationship is beginning, or cultivation, when the relationship is expanding. By identifying patterns of information practices associated with mentoring at various points in the mentoring process, I was able to define mentoring in a manner that is far more explicit than current definitions. Greater accuracy in definition will facilitate further scholarship, as well as development of training for both mentors and mentees.

There is a gap in our mentoring scholarship, as the idea of the information exchanged between mentoring partners -- as a way to characterize or even to measure the relationship -- has not been applied in other studies. This dissertation study is a first step toward a better understanding of the information-related aspects of mentoring, and thus a better understanding of mentoring itself.

Chapter 3: Methods

This chapter provides an overview of the research design of this dissertation, including the research problem and questions that I address, as well as the methodological framework. The study captured the granular details of mentoring information practices, as they occurred over time, and mapped them according to the dimensions identified in the theoretical framework described previously. The study was designed as a mixed methods study, because mentoring practices have both qualitative and quantitative aspects. As mentoring information practices take place within a social context, created in part by the relationship between the mentoring partners (e.g., micro social context), in part by the larger academic unit (e.g., meso social context), and in part by the discipline or university (e.g., macro social context), it was necessary to gather qualitative data about the way the participants perceive their social context. Additionally, mentoring information practices involve a number of quantitative dimensions, such as meeting frequency, topic distribution, topic frequency, and others. These quantitative dimensions, enriched by associated qualitative detail, combine to form a richer picture of the mentoring process. We can use this empirical data about the mentoring process, involving the detail of information practices, to develop training for mentors, and possibly mentees as well, that is more objective and explicit.

3.1 Problem Statement

Frequent and fluid information transfer is one of the hallmarks of a successful mentoring partnership. As Bozeman and Feeney define it, “mentoring entails informal communication, usually face to face and during a sustained period of time” (2007). This information transfer involves information seeking and sharing in a social context, or information practices. However, until now there has been no study of mentoring as information practice. Indeed, mentoring has never been studied from the perspective of the information exchanged between the mentoring partners. Since information exchange is a constant part of the mentoring relationship, evaluating the frequency, class, and extent of these information practices enables us to learn more about the nature of the mentoring relationship, as well as to describe it more accurately. A better description of the nature of mentoring can inform the development of training for mentoring participants, thus improving the process and creating real-world impacts.

3.2 Objectives

This study uses information practices as a lens to examine the mentoring process, and gain a better understanding of how information practices may define mentoring. The goals of this study are 1) to examine the information practices associated with mentoring across the dimensions

of topic, information class, rhetorical act, and frequency; 2) to investigate how mentoring information practices vary by mentoring relationship and over time; and 3) to identify to what extent and in what ways mentoring information practices are perceived by mentors and mentees as useful.

3.3 Research Questions

1. What are the characteristics of the information practices of mentors and mentees?
2. How do mentoring participants perceive the utility of their information practices?
3. How do mentoring information practices and participant perceptions of those practices change over time, as the mentoring relationship progresses?
4. How do mentoring participants perceive the ways that their social context encourages or constrains mentoring information exchanges, and the mentoring process in general, and how do those perceptions change over time?

3.4 Research Paradigm

This longitudinal mixed-methods study comprised a survey of faculty mentoring participants, and an information diary to which mentoring participants were invited to contribute. The study is informed by a pragmatist worldview (Creswell & Clark, 2010). That is, this study is

focused on the research result, ideally an improvement in our understanding of mentoring, rather than on the methods. A mixed-methods study is best suited to answer the questions of interest here. The philosophical assumptions that undergird this design are that while mentoring is undoubtedly situated and highly contextual, it always involves the exchange of information, or information seeking and sharing in a social context. The contextual aspects of mentoring – or the social contexts – are likely best described with qualitative data, while the information exchanged may be described primarily with quantitative data, though there are also qualitative aspects.

The theoretical lens that has guided the development of my research questions and the selection of methodology and research design is the concept of information practice – that is, information seeking and sharing in a social context (Savolainen, 2007). Like mentoring, information practices include both quantitative and qualitative elements. The act of seeking or sharing information may generally be considered objective: it either happens or it doesn't happen. Topics addressed in an information exchange are also usually objective, in the sense that most mentoring participants can be expected to agree on the broad topic of discussion (e.g., tenure, research, or etc.). The nature of the information sought or shared – such as whether it is a detail or fact, or whether it is an interpretation of details or facts – is also somewhat objective. This study considers these as

the quantitative aspects of the information practice. There is value in understanding these aspects of the mentoring relationship, particularly given the longitudinal design of this study. I suggest that such data is one way of characterizing the mentoring taking place, and that these mentoring information practices show us the nature of the mentoring taking place, over time.

On the other hand, the social context in which the information seeking or sharing takes place is constructed by each participant while the information practice is in process, and then perhaps reconstructed in memory. This is one of the qualitative aspects of the information practice, and also of the mentoring relationship. We may say that social context is what makes mentoring so much more valuable than a procedures manual or other type of handbook; information exchange within a social context is informed by that context and thus acquires an extra dimension. In fact, it is social context by which the individual makes sense of his or her situation. Qualitative research investigates this sense-making process (Patton, 2014, p. 3), and thus can give us a deeper understanding of how mentoring works.

Social context in this instance includes such elements as the individual's emotional state, the support or lack of support provided for the mentoring process by the unit, and even the nature of the relationship between mentor and mentee. These qualitative elements of context were

foregrounded as the participants completed the information diary. Thus, there was a close connection between the theoretical lens of information practices and the mentoring process. As such, information practices is an appropriate lens to guide the design of this study.

Because the nature of information practices involves both quantitative and qualitative data, a mixed-methods design is necessary in order to gain a complete picture of the information practices of mentoring. The research design may be considered an embedded design (Creswell & Clark, 2010, p. 69). With this type of design, quantitative and qualitative data are collected simultaneously, as depicted in Figure 9. Qualitative strands enhance the design of the quantitative study, and the same is true of the quantitative strands as they enhance the design of the qualitative study. Both qualitative and quantitative data were gathered in both phases of data collection, and data from each phase was compared and related as it was gathered, thus effectively triangulating the data.

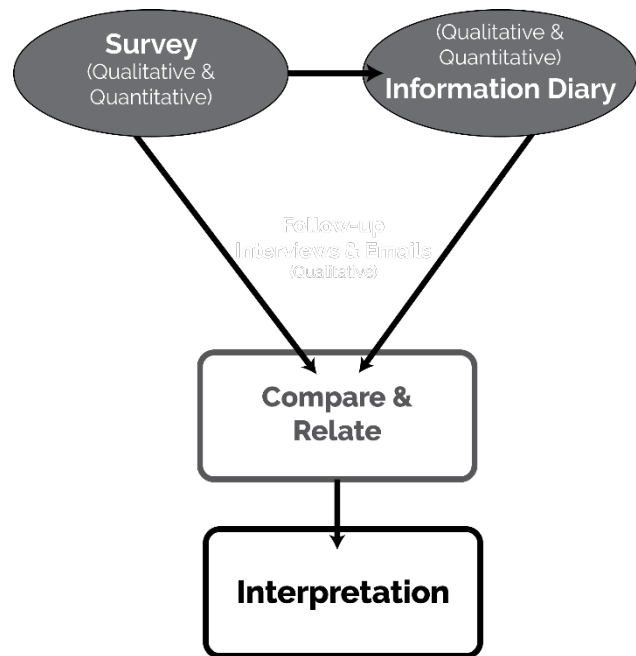


Figure 9: Embedded Mixed-Methods Design (adapted)

The entire population of mentors and mentees at MAU was surveyed in the first phase of data collection, and through the survey, participants were recruited for the second phase, the information diary. The survey and the information diary, an online tool developed for the purposes of this study, each gathered quantitative and qualitative data. As described above, information topics, information class, rhetorical act and meeting frequency are considered as quantitative data, while the participant's reflection about the mentoring interaction is considered as qualitative data.

This data collection design reflects certain assumptions on the part of the researcher:

1. There are different dimensions to the information exchanges of the mentoring relationship, such as topic (e.g., tenure, research), information class (e.g., fact, interpretation, judgment), and rhetorical stance (e.g., question, answer, discussion).
2. Not all mentoring experiences are equally satisfying to each of the participants. If the participant can describe his or her satisfaction in real time, the description can inform the development of mentoring training.
3. The social context of mentoring can only be described with qualitative data.

3.4.1 Participant Recruitment

The sampling frame for this study consisted of all tenured or tenure-track faculty who are engaged in mentoring – whether as mentor or mentee – at Mid-Atlantic University (MAU). By policy, all tenure-track professors at MAU must be assigned at least one mentor by their department chair or unit head. Currently there are approximately 300 tenure-track professors at MAU who should be participating in one or more active mentoring relationships. MAU also recommends that mentoring be provided to associate professors, but faculty at this rank were not encouraged to participate from the position of mentees. However, associate professors who serve as mentors were invited to participate in the study. Finally, faculty who are serving as mentors were recruited to participate in the study. In participant recruitment, the goal was to cast a wide net, in the interests of getting the broadest range of respondents.

Department chairs at MAU are required to report all the names of the assigned mentors for each of the department's assistant professors. These reports were also used in participant recruitment, in order to develop a larger pool of diary participants. All these faculty members were invited to complete a survey (see Appendix B: Survey of Faculty Mentoring Participants) intended to gather information about their experiences of mentoring and their attitude towards the process. Following their completion of the survey, the faculty were invited to participate in the

information diary (see Appendix C: About the Information Diary). As the mentoring information diary was conceived of as a reflection tool that may be useful to faculty mentoring participants, it was made available to any faculty who were interested in using it. All of the quantitative data gathered through the diary were analyzed for the study.

Though the information diary gathered details about mentoring information exchanges over time, it was not necessary for each member of a mentoring pair to participate. Instead, each diary participant was considered as a network node, with many potential mentoring information exchanges to report – some with the formally assigned mentoring partner or partners, and some with informal mentoring partners. It was felt that explicit recruitment of mentoring pairs might lead to a feeling of constraint when reporting information, as well as the possibility that if one side of the pair does not wish to participate, then neither member will.

3.4.2 Data Collection

Data collection took place through the survey of faculty mentors and mentees, and through the information diary. The survey was hosted on Qualtrics, a web-based survey development and management tool. The information diary, a database application developed for this study, was hosted on a university server at MAU.

3.4.3 Design of Data Collection Instruments

3.4.3.1 Survey of Faculty Mentoring Participants. The survey that faculty were invited to complete gathered demographic data about the faculty member, as well as data about his or her current and past experiences of mentoring. The survey also included open-ended questions that were intended to gather qualitative data about the respondent's attitudes toward mentoring. These questions were an opportunity for the respondent to speak generally about mentoring, with a focus on the philosophical or conceptual aspects of the process.

Development of the questions on the survey was informed by a review of literature on best practices of mentoring. The literature on mentoring best practices suggests that formal mentoring is improved when mentoring participants have a sense of their responsibilities and expectations for themselves and their mentoring partners. It is therefore significant to understand what mentoring participants think of their responsibilities and expectations. In addition, my earlier survey of faculty mentors at MAU suggested that mentors embody certain roles as they share information. Both quantitative and qualitative questions on the survey sought more information about where mentoring participants fit within these roles of information seeking and sharing. Finally, the qualitative responses of survey participants provided an overview of the social context

in which the mentoring – and the mentoring information exchange – took place, through their description of the affective qualities of the mentoring.

3.4.3.2 Mentoring Information Diary. The mentoring information diary is a web-based application that gives the user a quick, relatively easy way to record and comment on the substance of the mentoring meeting. The diary captures quantitative data about the information practices of the meeting, as well as affective, qualitative data about an individual meeting or the progress of the mentoring relationship. A diary was selected as the data collection tool because it gives respondents greater flexibility in the information they record, as well as an opportunity for richer, more individualized responses about their information practices. As with any diary, the information that a respondent entered was available for review by the mentoring participant who entered it, but was also immediately available for analysis as a part of this study.

It was also anticipated that the diary would give mentoring participants a context for beneficial reflection (Allan & Driscoll, 2014; Denton, 2011) on their mentoring practices, even as the participant entered data about his or her information practices. Each time the user made an entry in the diary, he or she had the option of including some reflection on the nature of the mentoring interaction.

A reflection prompt (randomly chosen from a set of ten) was provided because it is often easier for an individual to answer a question

than it is for him or her to write in general. While the study participants are faculty members, with years of schooling, research projects of their own, and scores of peer-reviewed publications to their names, these participants are likely not accustomed to jotting down the thoughts and feelings raised during an interaction with a mentoring partner. A mentoring participant may leave the meeting feeling a little dissatisfied, but before there is time to discern the cause of the dissatisfaction, a student arrives for a meeting, or it is time to go to class. The dissatisfaction is hidden by the press of other activities. While the reflection prompts cannot be generated in real time in response to the topics the mentoring participant has entered, they were intended to inspire the participant to pause and consider the affective qualities of the mentoring meeting. Further, the prompts reference mentoring best practices, recast in terms of the individual meeting, rather than asking the mentoring participant to comment on the big picture of the mentoring program or relationship.

The reflection prompts, modeled on the free-response questions of the survey, are:

1. What are your expectations of this mentoring partner? What are the steps you've taken to make sure your partner understands your expectations?
2. Do you have a philosophy of mentoring? How are you embodying it in your work with this mentoring partner?

3. Have there been any challenges in working with your mentoring partner? What is one of them, and how did you handle it?
4. What are your goals for this mentoring relationship?
5. What is the most rewarding (or most frustrating) thing about working with this mentoring partner?
6. Was there anything particularly satisfying or dissatisfying about the meeting you are describing here? What made it so?
7. What are your past experiences of mentoring? How does this mentoring partner compare?
8. It's often said that we learn to mentor by being mentored ourselves. What are you learning from this mentoring partner that you will use the next time you mentor someone?
9. What have you learned about mentoring by working with this mentoring partner? How has this partner helped to make your experience of mentoring more productive and rewarding?
10. What topic is or will be the most difficult to bring up with your mentoring partner? What is something you might do to make it easier for yourself?

In addition to the qualitative data from reflection prompt responses, the diary also made it possible to gather longitudinal data about the progress of mentoring relationships without requiring extraordinary commitment from the study participants. Longitudinal study of mentoring

is something that has traditionally been a challenge for scholars of mentoring (Weinberg & Lankau, 2011). Without a simple way to record the discussion of the mentoring meeting, the details of that meeting will likely be forgotten as the mentoring participant moves on to take care of the next task. Instead, diary users were asked to make diary entries within 48 hours of a mentoring meeting, while details were still fresh in their minds.

The design of the mentoring information diary was informed by my earlier studies of the information practices of mentees (Follman, 2013) and mentors (Follman, 2015). These earlier studies involved surveys and interviews with faculty mentees and mentors at MAU. The study of faculty mentees involved motivations and barriers to information seeking, while the study of faculty mentors focused more explicitly on information practices, asking questions about topics addressed, as well as about the social context in which the mentoring took place. The data collected through these two studies suggests that the information exchanged within the mentoring dyad can be mapped across several dimensions, including relationship between the participants, topics discussed, and the class of information exchanged. Given the primary goal for this study of describing mentoring in terms of the information exchanged, these additional dimensions can offer a more fine-grained picture of the information practices of the mentoring dyad, particularly as the mentoring information diary facilitates the collection of data about these information practices.

Through the use of the information diary, data was collected on actual information practices – that is, the individual instances of information seeking or sharing, and the social context in which they took place. This greater detail about the information exchanges taking place gives us a way to describe the mentoring relationship more explicitly, such that potential mentors and mentees can be trained to achieve greater success in their mentoring.

As is suggested by the concept of information practices, the dimensions of the mentoring information practice are influenced by social context, and are liable to change over time. These dimensions include:

1. The relationship between mentor and mentee, which will grow and change over time, or fail to grow and thus wither. For example, as the mentoring partners grow to know each other better, they may trust each other more and exchange different kinds of information. That is, a mentee who trusts her mentor to keep her questions confidential, may ask for information about taking paid parental leave, and about getting a tenure delay. On the other hand, if the mentoring partners don't get along, their relationship will remain static, and likely the mentee will ask others for the information he needs, or live with his uncertainty.
2. The topics of information exchanged by the mentoring participants, which reflect both the length of the mentoring

relationship, and the season or career point at which the mentoring information exchange takes place. A mentee who has only been at the university for a semester may be more occupied with setting up his lab or recruiting graduate students. A mentee who has just completed his third-year review is likely to be more occupied with gathering the materials for his tenure packet, or with producing his research statement.

3. The class of the information exchanged by the mentoring participants, such as details or facts (e.g., how to complete a travel reimbursement form), interpretation (e.g., which committee work is most useful for an early career faculty member), or general discussion (e.g., what are the chances of getting NSF funding for an ambitious new research program).

The relationship between mentoring participants is dynamic and has implications for the way that information is exchanged. In contrast to informal mentoring, in a formal mentoring relationship the phases of mentoring are speeded up, and there is likely to be less time for the initiation phase of mentoring, when the mentoring participants get to know each other and build trust. However, until there is a certain level of trust, information seeking and sharing may be constrained. Faculty mentors may be reluctant to share information until they know they can trust the mentee to appreciate the information. Faculty mentees may be

uncomfortable asking a question because the mentor will be voting on their tenure case. Further, the relationship between mentor and mentee will change as the external social context changes. For example, there may be a new department chair who will change the emphasis on mentoring, whether for better or worse.

In the context of the mentoring information diary, mentoring is understood to take place between many different dyads. Mentors and mentees exchange information with each other, of course, but also with others who are not a part of the formally assigned mentoring dyad. The mentee may want to ask his formal mentor a question, but rather than schedule a meeting and sit down with his mentor, he may choose to ask the professor whose office is just down the hall. Similarly, a mentor may share information with her formally assigned mentee, but she may also offer advice to a new faculty member whose mentor is unavailable. A mentoring information exchange may take place even when the mentoring participants have little regular contact with each other, such as when two people meet at a conference and discover a mutual interest, which leads the junior faculty member to ask for mentoring information from the senior faculty member whenever they meet, even though they are not at the same university, and may not be in frequent contact.

Despite the differences between one mentoring dyad and another, certain aspects of mentoring meetings are constant. As shown in Figure 10,

the mentoring diary gathered information about such constant aspects of the meeting as the date, location, duration, and the mentoring partner.

Given that mentoring partners together create a micro social context, the model informing this study suggests that information practices will be different with different mentoring partners. Therefore, the diary participant was asked to identify each mentoring partner, by means of a nickname. After entering some basic information about the mentoring partner, the diary participant could choose that partner from a dropdown list.

about the meeting

Mentoring Partner	Please make a choice	▼	Manage Partners
Meeting Type	Please make a choice	▼	
Meeting Date	mm/dd/yyyy		
Meeting Duration	Please make a choice	▼	

topics discussed

General Topic ⓘ	Please make a selection	▼	Add New Topic
More Detail	e.g., format of CV, choice of external evaluators, structure of		
Information Class ⓘ	Please make a choice	▼	
Q or A ⓘ	Please make a choice	▼	

reflection

What are your past experiences of mentoring? How does this mentoring partner compare?

[Save Diary Entry](#)

Figure 10: Mentoring Information Diary Form

As noted above, the mentoring information diary asked participants to create a distinctive nickname for their mentoring partner, and that nickname, along with meeting date and location, was used to distinguish one mentoring partnership from another. There was no expectation that participants would record only their meetings with formally assigned mentors or mentees. Instead, it was anticipated that one participant might

be mentoring two or three junior faculty, or that another participant might receive mentoring from two or three different people. Further, as shown in Figure 11, the diary gathered information on the circumstances by which each mentoring partnership was created, as well as some details basic to the relationship between the mentoring partners. In each diary entry, the mentoring interaction included the user-created nickname of the mentoring partner. Thus, it was possible to trace changes in the mentoring interactions, and in the social context of the relationship, across the duration of the study.

The screenshot shows a web form titled "about your mentoring partner" with a close button (X) in the top right corner. The form is organized into two columns of questions:

- Partner Nickname***: A text input field labeled "Nickname". Below it, a note reads: "Please don't use your mentoring partner's real name. Choose a nickname to preserve his or her privacy."
- What is your usual role in this partnership?**: A radio button selection field with options "Mentor" and "Mentee".
- How long have you worked with this mentor?**: A dropdown menu with the text "Please make a choice".
- How did you come to work with this mentor / mentee?**: A dropdown menu with the text "Please make a choice".
- How closely does your research align with the work this mentor does?**: A dropdown menu with the text "Please make a choice".
- How much experience in mentoring would you say this mentor has?**: A dropdown menu with the text "Please make a choice".

At the bottom right of the form, there are two buttons: "Close" and "Save".

Figure 11: Mentoring Information Diary Partner Information

Information topics of interest in faculty mentoring are also affected by the passage of time. While mentoring support for professional track faculty is increasing at universities, the bulk of mentoring occurs with tenure-track faculty as they progress toward tenure. At MAU, assistant professors are generally considered for promotion during their fifth year. The faculty member's promotion packet is a complex document intended to represent his or her achievements in research, teaching, and service. Near the beginning of a faculty member's appointment, the contents of the promotion packet are often of considerable concern. New faculty are also likely to be focused on ways to improve teaching, and questions of which committees to serve on, which journals to review for, and etcetera. As faculty members approach the tenure review year, they are likely to be more concerned with impact factors of journals, or how best to describe a research program. Topics of emphasis change over time.

In the mentoring information diary, users were able to record discussion on multiple topics during a single mentoring meeting. Information about the topic discussed was recorded with a one or two-word tag (i.e., the broad topic), and then the user was asked to include a more specific description of the topic. Beginning or first-time users were provided with a default set of topics that included tenure, research, and teaching. Every time the user made an entry in the information diary, he or she was provided with a dynamically generated list of all the tags that he or

she had entered previously. The user could also add topic tags at any time. Because the topics of discussion were linked to the meeting date, it was possible to trace changes in focus over the length of the study, as well as any change in emphasis within one group of items that have the same topic tag. For example, ‘advice about building a new undergrad level course’ and ‘what can I do to improve my student evaluation scores’ might both be tagged as teaching topics, though the nature of the topic is quite different.

Another dimension of faculty mentoring information that is likely to change over time is the class of the information exchanged. In some instances, the faculty member may be seeking information that is a fact or detail. For example, the faculty member may ask who to talk to about getting a journal subscription added to those available at the library. Another example of a fact or detail of interest might be finding out how to submit a funding requisition for travel. Generally, once the faculty member has asked this type of question once, there is little need to ask it a second time.

Another kind of information that the faculty member might seek may be characterized as interpretation. A faculty member might be interested in hearing what the senior faculty member thinks about a new policy being considered in the faculty senate, or advice on where to submit an article for publication. Information in the category of interpretation may be sought repeatedly, as circumstances change or as new details

become available. A third kind of information might be described as reassurance. While reassurance is not the kind of information traditionally considered in studies of information seeking, it is a form of information, in the sense that the junior faculty member turns to the mentor to say, for example, ‘This paper has been rejected four times now; should I even bother to send it out again?’ or ‘I feel so overwhelmed with all these papers to grade. I don’t know how I’m ever going to get through them.’ Given the psychosocial qualities of the mentoring relationship, it makes sense to assess the way faculty mentoring participants engage in reassurance. When the user made entries in the mentoring information diary, he or she was prompted to choose the information class in connection with each topic discussed. It is of interest to see how the nature of information exchanged between the mentoring participants changed over the period of the study. It may also be of use to the user to see that he is repeatedly offering reassurance to his mentoring partner, or that he is never asked questions involving interpretation.

3.5 Data Analysis

Data gathered through both phases of this study create a picture of the information practices associated with mentoring. Through their responses to the survey of faculty mentors, MAU faculty have provided data about their demographic characteristics, their previous experiences of mentoring, and their attitudes toward the mentoring process. Through

entries in the mentoring information diary, faculty mentoring participants have provided data about the frequency of their meetings, the topics they discussed, and the class of information exchanged with each topic discussed, along with reflections about the nature or quality of the mentoring meeting. In order to identify patterns of interest, data was analyzed across participants, but also across characteristics of the mentoring dyad, such as mentoring phase, and across the relative experience of the mentoring participants.

Quantitative data from the survey of faculty mentoring participants was evaluated using SPSS in order to generate descriptive statistics about the respondent population. A codebook of variables represented in the data, their definitions, and numbers associated with response options was developed, as recommended by Creswell and Clark (2010, p. 204). The information diary also generated quantitative data, such as the frequency of mentoring meetings, and the number of topics addressed at each meeting. This data was evaluated across the different dimensions of the mentoring information exchange, so that one can identify for example how many times a particular topic was addressed within a particular mentoring partnership, within a particular mentoring phase, or in general across the population of participants.

The open-ended survey responses were evaluated using Dedoose, web-based mixed-methods analysis software. Patterns of meeting

frequency, information topic, and information class emerged when mapped against the mentoring dyad’s experience together and against the mentee’s progress toward tenure.

Table 1, below, lists the research questions that inform this study, mapped to the data collection instruments described above.

Table 1: Connection of Research Questions to Data Collection Instruments

Research Question	Data Collected
What are the characteristics of the information practices of mentors and mentees?	Relationship details, meeting frequency, topics addressed, etc.
How do mentoring participants perceive the utility of their information practices?	Qualitative responses to questions about attitudes toward mentoring, communication, and responsibilities.
How do mentoring information practices and participant perceptions of those practices change over time, as the mentoring relationship progresses?	Cross-tabulation of coded qualitative responses with length of experience in mentoring.
How do mentoring participants perceive the ways that their social context encourages or constrains mentoring information exchanges, and the mentoring process in general, and how do those perceptions change over time?	Qualitative responses to questions about attitudes toward mentoring, communication, and responsibilities.

As is generally recommended (e.g., Bogdan & Biklen, 2007; Merriam, 2009; Patton, 2014), qualitative data analysis took place while the data was being collected. The qualitative strands of this study emerged over the

course of the study, as I discovered more about the connections between quantitative aspects of mentoring information practices, and the qualitative aspects. Therefore, qualitative data – collected by the survey software or the information diary – was coded according to the participant who provided it. Analytic coding, which is based on interpretation of meaning and involves possible categories for the data (Merriam, 2009, p. 206), was performed iteratively. See Appendix D for the complete codebook, with codes, definitions and example quotes.

3.6 Verification and Validity

One of the challenges in studying mentoring is a reliance on qualitative data gathered from relatively small populations. This study was intentionally designed as a mixed-methods study because through the lens of information practices, it should be possible to examine the process of mentoring quantitatively, and then to enrich that examination with qualitative data. Thus, this study seeks to meet two standards of credibility or validity. Quantitative data gathered must represent “meaningful indicators of the construct being measured,” as described by Creswell and Clark (2010, p. 209). On the one hand, the theoretical framework for this study is a new conception of the mentoring process as one that involves information practices. Therefore, the reliability of the data collection tools is untested. However, other than demographic data, the aspects of mentoring practice being assessed are straightforward questions of

information topic and frequency, related to the proposal that a mentoring participant will perceive mentoring information practices as of greater utility when those practices cover certain topics and occur with greater frequency. That is to say, the mentoring participant will likely be more satisfied with the mentoring she is receiving, when it is addressing what she perceives to be her information needs.

Meanwhile, the qualitative data gathered for this study was intended to enrich the interpretation of the mentoring information practices in which participants engage. As Merriam notes, qualitative research is an investigation of how people construct reality; those constructions or interpretations of reality can only be accessed directly through observation and interview (2009, p. 242). This presents one of the potential limitations of the study, as most of the data will be gathered through participant self-report, rather than through observation or interview. However, the nature of the data collection tool – the online mentoring information diary – made possible a unique form of member-checking, as a type of triangulation. As participants made entries in the information diary, they built a personal record of their mentoring process and information practices, created over time. As I reviewed the diary entries created by a mentoring participant, and identified trends or patterns, I could contact the participant directly and ask him or her to comment on the trends or patterns I noticed.

Finally, the study is most likely to be considered credible if readers can follow my path through the data, and agree that my interpretations make sense. In order to make such a judgment possible, the study findings must be presented in the fullest possible detail, with careful explanation of the interpretations I have developed. Merriam suggests: “Good qualitative research gets much of its claim to validity from the researcher’s ability to show convincingly how they got there, and how they built confidence that this was the best account possible” (2009, p. 252). Patton comments that data is only trustworthy if the researcher is trustworthy (2014, p. 706).

3.7 Ethical Considerations

This study should not have had any negative effects for faculty mentoring participants. However, I asked faculty to trust me with detailed information about a process which is customarily private. The information that faculty trusted me with was occasionally also related to their tenure cases, since most faculty mentees at MAU are preparing to navigate the tenure process. While I am the researcher, I am also involved with the administration of tenure cases, through my position in the Provost’s Office. It was therefore essential that I preserve the privacy of the study participants, through careful anonymizing of data, and even suppression of data that cannot be effectively anonymized.

It was also the case that study participants sacrificed their very limited time in order to create and provide the data that I needed. I tried to

make the information diary useful to mentoring participants as well as to me. However, it is my duty to honor the sacrifice of time that research participants make by using the data to develop findings which may address a true gap in mentoring scholarship, and enable me to make recommendations that improve the mentoring provided to faculty – at MAU, and elsewhere.

Chapter 4: Findings

In this chapter, I will introduce my findings and characterize the participants in my study. Next, I will present relevant findings for each of the study's research questions:

1. What are the characteristics of the information practices of mentors and mentees?
2. How do mentoring participants perceive the utility of their information practices?
3. How do mentoring information practices and participant perceptions of those practices change over time, as the mentoring relationship progresses?
4. How do mentoring participants perceive the ways in which their social context encourages or constrains mentoring information exchanges, and the mentoring process in general?

The final section provides a summary of the findings presented in this chapter.

4.1 Introduction

This chapter summarizes the data gathered in this study, as well as the findings from that data. There were a number of interesting developments from the qualitative and quantitative responses to the survey and the diary, namely that information practices is an effective lens

for examining mentoring. The goal of this study was to apply the concept of information practices to faculty mentoring, in keeping with the theoretical framework detailed earlier. Information practices gives us a way to characterize the mentoring relationship, and thus a way to evaluate it empirically and to provide more specific training of mentoring participants.

4.2 Survey Participants

The invitation to participate in the survey of faculty attitudes toward mentoring was distributed to all tenured and tenure-track faculty, as well as permanent status and on-track librarians (n=1,528). Twenty-four percent (n=366) of faculty responded to the survey. Among these respondents, 35% (n=128) indicated that they were not currently engaged in faculty mentoring. Five percent of respondents (n=19) did not answer the question regarding participation in faculty mentoring. If a respondent indicated no current involvement in faculty mentoring, or did not answer the question, he or she was directed out of the survey. The final sample of survey participants was thus 14% (n=219) of the original population.

Survey respondents were more likely to be the mentor (n=125; 57%) than the mentee (n=94; 43%). However, assistant professors responded to the survey in a greater proportion than their representation among the faculty. Assistant professors are required by MAU policy to be mentored by a more senior faculty member, and that faculty member is usually at the

rank of professor rather than associate professor (S. Marcus, personal communication, July 2014). Almost a third of survey participants were assistant professors (n=66; 30%), as compared with the sample frame (n=241; 21%). Only thirty-six percent (n=79) of the survey respondents were professors, on the other hand, as compared with the sample frame (n=538; 46%).

Survey respondents who are currently engaged in mentoring were evenly divided by gender. This means that women were over-represented in the sample. Among the survey respondents who were currently engaged in faculty mentoring activities, half were women (n=110; 50%). However, only one-third of the sample frame were women (n=510; 33%).

As one would expect, survey respondents who were engaged in mentoring another faculty member tended to be older, while those who were being mentored tend to be younger. 58% of faculty mentees (n=52) who responded to the survey are 40 or younger. Meanwhile, 70% of faculty mentors (n=72) are between 51 and 70.

Race and ethnicity of survey respondents tracked closely, if not completely, with the sample frame. The details of race and ethnicity, as reported by survey respondents and compared with the sample frame, are presented in Table 2, below.

Table 2: Race / Ethnicity of Respondents, Compared with Sample Frame

	Survey Respondents		Sample Frame	
	N	%	N	%
<i>American Indian or Alaska Native</i>	0	0%	1	0%
<i>Asian</i>	19	9%	171	11%
<i>Black or African American</i>	7	3%	75	5%
<i>Hispanic</i>	3	1%	66	4%
<i>Native Hawaiian or Other Pacific Islander</i>	0	0%	2	0%
<i>White</i>	171	78%	1077	70%
<i>Other</i>	8	4%	10	1%
<i>Prefer Not to Say</i>	11	5%	126	8%
<i>Total</i>	219		1528	

MAU is divided into twelve colleges, of which four are considered small and eight are considered large. Librarians are also considered to comprise a college. While faculty who responded to the survey were asked to identify their college, they also had the option to indicate “prefer not to say” or to leave the question blank. Faculty from three colleges – Agricultural, Information, and Libraries – responded to the survey in a higher proportion than their representation in the larger population, but faculty from all other colleges responded in a lower proportion.

4.3 Diary Participants

Respondents to the survey were also invited to participate in the information diary, an online tool for recording the information practices in

each mentoring meeting. Thirty-one faculty (14%) agreed to participate and logged in to the diary. Of those, 20 (9%) made diary entries, one made a diary entry but the information about his mentoring partner was deleted, and one stored information about two mentoring partners but did not make any diary entries. Most of the 20 faculty who participated (n=12; 60%) made only one or two entries. Each of the remaining eight diary participants made an average of six diary entries.

Users of the information diary were most likely to be women (n=15; 71%) and to be mentees (n=12; 57%). A third of the diary users were from MAU Libraries (n=7; 33%), with three from engineering, three from social sciences, two each from agriculture, the arts, and business, and one each from education and public health.

Diary entries consisted of quantitative data regarding the meetings that took place and the topics discussed, as well as qualitative data in the form of descriptions of the topics and reflections on the mentoring meeting. Participants made a total of 68 diary entries. Twenty-one (31%) of these were entries with no reflection. The remainder included a reflection on a variety of topics. Some of the respondents used the reflection prompt to lead their writing, while others just wrote about that which concerned them.

As mentioned earlier, diary reflection prompts were modeled on the free-response questions of the survey. Data from the diary responses is included with the survey data that follows.

4.4 Qualitative Data

Faculty responses to open-ended questions on the survey were coded to identify the themes that were present in the data. These responses could also be organized into two broad categories: those that describe some element of information practices, and those that do not. Information practices are the central element of the theoretical framework undergirding this study, and when faculty mentoring participants described those information practices in their free-response answers, we can draw conclusions about the ways that faculty understand their mentoring participation. The information practices of faculty mentoring participants can be characterized by the topic of information that is sought or shared, as well as the social context of the information seeking and sharing in which participants engage. The following sections characterize participant comments in the free response questions, as well as describing how those comments support each of the research questions. Individual responses are coded either “SR”, for Survey Respondent, or “DR” for Diary Respondent.

4.4.1 Characteristics of Information Practices

This section presents results pertaining to this study's first research question: What are the characteristics of the information practices of mentors and mentees? The survey asked questions intended to identify the information practices of faculty mentoring participants. In addition, faculty who participated in the Information Diary provided details regarding their information practices with each diary entry. Responses highlighted themes regarding information practices, such as the importance of a good relationship between the mentoring partners, particular channels of communication, and topics on which mentoring partners generally seek or share information.

The results which follow are organized according to the broad themes of mentoring practices which were addressed by the free-response questions on the survey, as well as in the reflection prompts of the Information Diary. These themes are:

- **Communication** with the mentoring partner
- **Expectations** of the mentoring partner
- **Responsibilities** as a mentoring participant
- **Important aspects** of mentoring practice
- **Philosophy** of mentoring

In each of the following sections, the responses within the theme are summarized, with some significant examples provided.

4.4.1.1 Communication. Faculty were asked about their communication with their mentoring partners. In two separate questions, survey respondents were asked first about the best aspects of communication with their mentoring partners, and next, about the worst or most difficult parts of communication. Responses from both mentors and mentees emphasized the importance of:

1. their relationship with their mentoring partner as a factor in communication,
2. the mentoring partner's personality, and availability; and
3. the communication channels used.

One difference between responses from mentors and mentees was that mentors more frequently made comments relating to the honesty of communication, while mentees tended to make comments relating to their physical proximity to their mentoring partner, and how that impacted their communications.

Mentees responding to the question about the best part of their communication (n=65; 69%) seemed to emphasize the context or the channel of their communications. Several referred to emailing their mentor, while others commented on the proximity of their office to the mentor's office. Others described their relationships with their mentors, or described the content of their meetings, such as the things that were easiest to talk about. One mentee said about the content of her meetings with her

mentor, “My primary mentor ... really provides perspective on a lot of the issues I bring to her” (SR 205). A number of mentees referred to quick meetings, such as two-minute meetings or hallway meetings, as being desirable. As one mentee said, “Her office is close to mine and that makes it easier to have brief 2-minute meetings” (SR 73).

Mentors, in contrast, seemed to speak more frequently about their relationship with the mentee as the best part of their communication, with their comments suggesting that communication was easy or seamless because of their relationships with the mentees. As one mentor said, simply, “Our personalities match well” (SR 332). Another said, “My mentee is just very approachable, so we have an ability to engage in informal discussion easily” (SR 84). Few mentors referred to an informal meeting – the two-minute meeting as described above – as a function of their communication. Mentors did refer to the content of the meeting as part of what made communication seamless: e.g., ‘it’s seamless when I’m communicating good news,’ or comments of that nature. One mentor said, “I find it easiest to communicate about ideas and actions that are opportunities” (SR 216). Another said the best aspect of communication was “What he’s doing well” (SR 206).

Regarding the negative aspects of communicating with mentoring partners, mentees often referred to being busy, whether it was that both the mentoring partners were busy, or the mentor was busy, or meetings

couldn't be scheduled for whatever reason. One mentee said, "Time, neither of us have the time" (SR 266). As another said, regarding the negative aspects of communication, "None, except maybe that we're both busy. But the only way he wouldn't be busy would be if he were not successful, in which case I wouldn't want him as a mentor" (SR 256). Other responses referenced the difficulty of talking about awkward topics. As one mentee said, "It can be awkward when I have not been making progress on important goals" (SR 264). Another said, "I find it difficult to talk about my research agenda or lack thereof. I'm just over my first year as a faculty member and a lot of the research that I have completed during my first year is a product of initiatives that I have somewhat stumbled into either as a graduate research assistant or as part of unfunded research work that ultimately did not pan out. So, when it comes to my personal aim for research and what I wish to accomplish as a faculty member, I sometimes feel at a loss even when talking to my mentor" (DR 93622). Some responses highlighted the theme that the mentor didn't understand what the mentee needed to know. As one mentee commented, "Our areas of work and scholarship are dissimilar. Given this, getting specific advice on research and potential research partners is difficult" (SR 236).

Some of the mentors responding to this question seemed to blame the mentee, in the sense that they said the worst thing about communicating was when the mentee didn't do as they had been advised.

As one mentor said, “The most difficult aspect is having the mentee to listen. I suspect, and hope, they are being mentored elsewhere. However, it seems that they are often listening to others who are not on our campus and this could very well be unwise” (SR 15). As did the mentees, these respondents emphasized that it was hard to find time to meet; that both they and their mentees were busy. “Our full schedules,” said one mentor (SR 64). Another said, “Everyone is busy. The mentoring I do is time intensive. They are busy too” (SR 104). Other than being too busy, mentors seemed to comment that it was difficult to give their mentees bad news, and the bad news was characterized in terms of unmet goals for the tenure dossier. As one mentor said, “I find it difficult to communicate about matters that need to be addressed through actions he needs to take (like writing papers, completing students, etc....) that will be necessary for successful promotion” (SR 216). However, a number of mentors said there were no problems with communicating. As one noted, with perhaps a touch of sarcasm, “She [my mentee] speaks English, has been teaching for many years, and doesn't seem to have any embarrassing issues to discuss. So I have no difficulty communicating whatsoever” (SR 302).

4.4.1.2 Expectations. Both mentors and mentees were asked about their expectations of their mentoring partner. Three-quarters of the mentees (n=71) responded to this question. Their responses emphasized a need for advice and support from their mentors, which may be considered

as types of information seeking. Mentees were also inclined to refer to the mentor's honesty. In a number of responses, the mentee referred to "honest feedback" or "honest advice," as if there were concern that the mentor would not provide a straight answer about what the mentee should be doing or working on. One mentee described his expectations of his mentor as, "Give me their honest opinion on things. Provide insights from "the other side" (i.e., the tenured/senior side). Tell me what has worked or not worked for them. Help provide perspective on things – is this or that a catastrophe or just a minor hiccup?" (SR 89). However, the largest number of mentees (n=27; 38%) indicated that they expected their mentor to help them with the tenure process. Indeed, in 14 of these responses, *only* tenure was mentioned; the mentee listed no other expectations. Some examples: "Help me get tenure" (SR 48), "Help guide me through the tenure process" (SR 119), "Help me navigate the tenure process" (SR 82), "Provide tenure-related advice" (SR 95).

Responses from faculty mentors to this question highlighted different themes. For example, mentors focused on communication and commitment in their responses, whether their own commitment or that of their mentees. Eighty percent (n=100) of mentors answered this question, many in ways that emphasized the importance of communication. One mentor said, "[I expect] that they will let me know what kind of relationship works best for them; they will seek me out for advice or to talk

through issues that emerge. Let me know the good and the bad, what's working and what's not so I can assist or identify sources that will be useful" (SR 129). Another said, "I expect him to consult with me regularly for formal advice and if questions arise. I also expect him to meet with me at least once per semester for informal conversation" (SR 159). Regarding commitment, one mentor said he expected, "The mentee will be engaged in the mentoring process, accept and provide feedback, and be willing to dialogue on challenging issues around teaching performance" (SR 165). Another mentor said his expectations of mentees were that, "they follow up on advice and suggestions provided and come prepared for meetings" (SR 130). Mentor responses regarding their expectations also referred to tenure, but not in the same proportion as mentees. Instead, mentors tended to emphasize that mentees should be open-minded about advice. As one said, her expectations were simply "that [my mentee] give some consideration to my recommendations" (SR 84).

4.4.1.3 Responsibilities. Survey respondents were also asked about their sense of their own responsibilities as mentoring participants. A sense of responsibility is, of course, an acknowledgment that your actions are taking place within a social context. If you feel responsibility toward your mentoring partner, then implicitly, you understand the social context of at least the mentoring relationship (micro), if not also the department or unit level (meso) and the discipline level (macro). Information practice is

defined as information seeking and sharing in a social context. For faculty participating in mentoring, the relationship with the mentoring partner is the foundation of the social context, and one's sense of responsibility toward the other partner is central to this. Interestingly, very few faculty mentees responded to this question (n=18; 19%), while many faculty mentors did (n=103, 82%). The responses from faculty mentees emphasized their own tasks, such as providing information to the mentor or updating their CV or other tenure materials, rather than responsibilities they might feel to the mentor. For example, one mentee said her responsibilities included, "Provide documents prior to the meeting to update status on my academic record" (SR 137). Another said her responsibilities were, "Developing short- and long-term career plans and reporting on progress; keeping my mentor updated on activities both within and outside the department/school" (SR 131).

As noted above, mentors (n=103; 82%) were much more likely to respond to this question than faculty mentees. Their responses highlighted the themes of advice, guidance, and support, while also emphasizing information topics such as tenure, research, and teaching. One mentor described her responsibilities as, "Someone who serves as a guide to the profession, its culture, and its demands. Someone who makes sure that the junior person is growing to be an independent, strong researcher" (SR 10). Another said her responsibilities included, "to assist with any problems,

questions, or concerns that my mentee has; to provide advice on progress through the promotion and permanent status process; to assist in orientation to new job responsibilities; to be a listening ear and a sounding board” (SR 215). Some mentors emphasized certain aspects of the information they provided, such as, “My mentoring is in the area of teaching, so is fairly targeted to teaching in relation to student learning and faculty promotion/APT. I feel it is important to be honest and thoughtful with my feedback and mentorship, and to set clear expectations for the mentoring relationship” (SR 165). Others seemed to focus on their role as a guide through the social context of the unit and the university, such as “Make sure that expectations are made clear, describe and explain ‘the lay of the land’ and explore options for best navigating it, keep the mentees ‘in the loop’, i.e. well-informed about what is going on in the University, in the community, and in their scientific discipline, and how to take ‘the long view’ in terms of putting together a career spanning 30+ years” (SR 79).

4.4.1.4 Important Aspects of Mentoring. Both mentors and mentees were asked about the most important aspect of the mentor’s work. Mentees were slightly less likely (n=66; 70%) to respond to this question than mentors (n=98, 78%). Responses from the mentees emphasized the theme of tenure more than any other aspect of their information practices. In fact, the responses of mentees to this question seemed to emphasize the same themes as those derived from their comments about their

expectations of mentors. Essentially, mentees said the most important part of their mentors' work was to help them get tenure, or to provide information that was likely to lead to tenure. Mentees also emphasized the importance of honest feedback from their mentors. As one said, "He provides me honest feedback and advice that will help me as I move towards submitting my tenure package. I may not always like what I hear, but it is important to get that honest information" (SR 110). Mentees also commented at length about how their mentors provided support for them when they needed it. As one mentee said, "She is my cheerleader and picks me up" (SR 150). Another commented, "She has my back, checks in at the right time, and is a thoughtful and helpful professional with demonstrated success in our field" (SR 320). One mentee said the mentor's most important role was, "Providing a venue where I can openly vent and share frustrations. Not only is this healthier than keeping these feelings bottled up, she can often help me to find solutions if I need help doing so" (SR 199). Mentees also noted that they expected their mentors to keep their discussions confidential. As one described what he was expecting from his mentor, "Be a confidential sounding board for discussion of work-related issues" (SR 192).

Many mentors responded with detailed statements regarding their perceptions of the most important part of their work. These responses highlighted the theme of supporting the mentee's progress, whether

toward tenure, job satisfaction, work-life balance, or successful scholarship. The mentors' responses gave different explanations of what constituted that support. For example, as one mentor said, "This might take the form of advising my mentee not to take on too many service oriented commitments, or have a frank discussion regarding publication productivity, and also providing an opportunity to produce research" (SR 35). Another mentor said the most important part of mentoring is to "Help them understand what is expected of them. Help them to grow. Answer questions they may have. Point to them to people or resources they may [not] know about. Help them to succeed on their terms" (SR 231). Respondents also emphasized the importance of making sure the mentee understood the expectations of the unit, the college, the discipline. For example, one mentor said her most important work involved, "Making invisible rules visible" (SR 260). Another said, "Communicating exactly what someone is expected to do and how to move forward under those expectations" (SR 143). Another said, "Explaining department tenure expectations" (SR 18). After support, responses from mentors were most likely to be coded with tenure and with expectations. In all cases, the mentors' comments about the most important part of their work referenced aspects of information practices, such as the social context of the information seeking and sharing, as well as the nature of the information practices themselves.

4.4.1.5 Philosophy of Mentoring. Mentees and mentors were also asked if they had a philosophy of mentoring, and what that would be. Among mentees who responded to this question (n=66; 70%), the greatest number (n=25, 38%) indicated that they did not have a philosophy of mentoring. When the mentee did identify a philosophy, relationship aspects were emphasized slightly more than other themes. As one respondent said, “I think great mentoring involves flexibility and positivity. Not everyone will move through the tenure track (or other things) the same way. Talking through options without dictating action seems to be the most helpful thing” (SR 237). On the other hand, another respondent said, “No one mentor will be sufficient. Making sure you cast your net widely across a number of mentors spreads the burden out” (SR 26). Mentee responses to this question also emphasized honesty. As one respondent said, “I think that a good mentor is one that is honest and who has the best interests of the mentee in mind when giving advice (and not his/her own agenda/motives)” (SR 188). Most of the mentees who indicated a philosophy of mentoring suggested that the mentoring process should be driven by the mentee’s needs. As one said, “I would say that a mentor should give advice based on their experience and the best interests of the mentee, even if that means giving advice that is not in the best interest of the mentor” (SR 139). Another said, “My philosophy is to let the mentee take the lead in determining the dynamic of the relationship, such as deciding how

(online/in person/phone) and how often they'd like to meet and the topics they'd like to discuss. I think this helps the mentee get the most out of the relationship” (SR 199).

Mentor responses (n=98; 78%) to this question emphasized supporting the mentee, building a relationship with the mentee, and honesty in their communications with the mentee. As one of the respondents said, “Mentors should provide emotional support and practical advice ... Mentees are adults who should take advantage of the mentoring but not be wedded to the advice I give” (SR 152). Another respondent said, “I suppose that I believe in open and honest communication, in mutual respect between mentor and mentee, in transparency with respect to requirements, in being deliberate about respecting differences of opinion and background, and wanting the best for the whole person” (SR 161). A third respondent said, “I want to be supportive without creating additional burdens or expectations for my mentees. I see my primary role as providing unconditional support to him/her along with honest feedback” (SR 221).

As with the mentees, twelve of the 98 mentors (12%) who responded said they did not have a philosophy of mentoring, but then several of those then went on to outline what might be considered as such a philosophy. For example, one respondent said she had no philosophy, and then said, “Different people need different things. But it's not a one-way street.

Mentees have to be analytical and engage in discussion about needs and value of advice given” (SR 42). Another respondent said no, and then said, “mainly be available, try to give good advice, and help navigate around a complicated and sometimes confusing academic environment” (SR 319).

4.4.2 Utility of Information Practices (RQ 2)

This section presents results relating to the second research question: How do mentoring participants perceive the utility of their information practices? Based on the data collected with both the survey and the diary, it seems that mentors and mentees feel their information practices to be useful, at least within certain contexts. Responses across a variety of topics, such as the frequency of meetings, the length of meetings, and the types and topics of information exchanged suggest a degree of commitment to mentoring and information practices which would likely not be present unless the participant felt the effort to be useful. This commitment is also evident in responses to the open-ended survey questions. For example, mentees and mentors made several comments regarding the value of honest feedback, as well as the importance of paying attention to what is said, and keeping an open mind about what is said. These comments suggest that faculty mentoring participants perceive their information practices to be useful, because they would otherwise not place so much emphasis on these aspects of communication. Further, faculty mentors commented in detail on their sense of their responsibilities as

mentors, and both mentors and mentees commented on their perceptions of the most important part of the mentor's work in ways that referenced information practices and suggested those practices were both useful and valuable.

Taken together, these responses to the survey questions suggest that faculty do perceive their mentoring information practices to be useful. Indeed, among the entire group of respondents, only seven mentors commented on problems with information practices related to the mentee not listening. In two additional cases, a mentee said that the information provided by the mentor was not useful, or that the mentor was not providing any information. In sum, only nine out of 219 respondents (4%) – seven mentors and two mentees – made a comment that suggested their information practices were not useful. From this we can extrapolate that faculty mentoring participants believe their information practices to be useful and worth the effort.

One example of the value faculty placed on their information practices is related to honesty. Faculty comments that emphasize honesty indicate value because in the context of the feedback and constructive criticism that are part of the interaction between mentoring partners, honesty takes much more effort than does more superficial evaluation. While it is a relatively simply thing to say, perhaps with perfect truthfulness, 'this is a fine job,' it takes much more effort and time to craft

and provide the constructive criticism that will take a work from 'fine' to 'excellent'.

Both mentors and mentees emphasized the importance of honesty as an aspect of their communication with their mentoring partner. Mentees stated that honest feedback was an essential part of the work their mentor did, or perhaps the only expectation they had of their mentor. One mentee stated that his expectations of his mentor were, "Open and honest assessment of my performance so far" (SR 249). Another said only that her expectations of her mentor were, "To provide honest feedback" (SR 148). A third said, "What I really have appreciated about my mentor [is] ... she gives me honest feedback" (SR 75). Another mentee said the most important part of his mentor's work was, "Giving me feedback about whether I'm on track for achieving full professorship" (SR 289).

For mentors, honesty was equally important; many said that making honest comments or giving honest feedback was their most significant responsibility. Others commented that they expected honesty from their mentees. As one said, simply, her expectations of her mentee were, "Open mindedness, honesty" (SR 10). Another mentor said, "Open and honest dialogue is the best philosophy that I can come up with" (SR 165). Another said, "Be open, be honest and provide useful information and insights" (SR 123).

4.4.3 Change in Information Practices Over Time (RQ 3)

This section describes data relating to the third question guiding this study: How do mentoring information practices and participant perceptions of those practices change over time, as the mentoring relationship progresses? Faculty responses to the survey give us a point in time picture of mentoring participant information practices and their perceptions of those practices. However, we can compare the attitudes and practices described by faculty who are new to their mentoring relationship or mentoring in general, with those described by faculty with more mentoring experience or a longer time with a mentoring partner. This comparison may suggest a trend in different themes or areas of focus by mentoring participants.

On the survey, faculty were asked about how long they had been involved in mentoring on campus, whether as mentor or mentee. Eight-nine (95%) faculty mentees answered this question, with the majority of respondents having been mentored by other faculty between two and five years (n=41; 46%). Eleven mentees (12%) had worked with their mentor for less than a year. Eighteen of the respondents (20%) had worked with their mentor between one and two years, while about the same number (n=19; 21%) had worked with a mentor for more than five years.

Faculty mentees with longer experience of receiving mentoring described their expectations of their mentors in terms of the information

they were seeking. As noted above, many of these responses highlighted the theme of feedback or honest feedback. One respondent identified his expectations of the mentor as, “Provide regular feedback on my progress” (SR 245). Another said, “To provide feedback on my progress and suggest other things I need to do” (SR 109). Meanwhile, other mentees expected that their mentor would guide them or explain to them the tenure process. As one said, “Guidance through the third-year review, tenure process, publishing, and surviving academia” (SR 338). Another said, “To provide support and guidance. Identify strengths as well as gaps in academic record” (SR 289), while a different respondent said simply, “Guidance” (SR 286). Of course, there were respondents who addressed both of those themes, such as “That mentor can guide me through tenure process. ... Be a sounding board for research, teaching and service ideas and decisions” (SR 368).

Mentees with less than two years’ experience being mentored also referred to the information they were seeking in describing their expectations of a mentor, but their characterization of that information was more specific than that of mentees with greater experience. Several of these respondents indicated that they expect explicit career guidance from their mentor. As one respondent said, “Guidance and advice. Someone to talk to when I am struggling with departmental politics” (SR 150). Another said, “Helping to develop career plans, answering questions as they arise,

acting as a go-between if necessary when being pressured to take on extra projects” (SR 131). Another respondent said her expectations of the mentor were, “Candid advice on how to be successful in this department” (SR 82).

Eighty-six percent of faculty mentors (n=107) answered the survey question about how long they had served as a mentor. Respondents were most likely to have served as a mentor for more than five years (n=69, 65%). These mentors responded to questions about their mentoring practices in ways that highlight differences between their attitudes and those of mentors with less experience. Perhaps the greatest difference was evident in the way mentors described their own responsibilities to the mentoring partnership. Mentors with greater experience tended to describe their responsibilities in terms of their unit, or even their discipline. As one respondent said, “All senior faculty should mentor junior faculty...they must bring the more junior faculty into the community and help them navigate the professional and political aspects of academe” (SR 71). Another mentor commented that her responsibilities were, “to guide this new faculty member’s integration into the department” (SR 84).

Faculty mentors with two to five years’ experience (n=21, 20%) described their responsibilities with an increasing emphasis on providing feedback to the mentee, and more reference to interpreting or describing the department culture. One mentor described her responsibilities as, “Give the most productive feedback I can on their research; give advice

about other time commitments” (SR 104). Another said, “My responsibilities are to provide frequent feedback and suggestions regarding professional activities, and provide information regarding requirements and expectations (formal and informal) regarding promotion and tenure” (SR 153).

Seventeen faculty mentors (16%) indicated that they had served as a mentor for less than two years. These mentors tended to describe their mentoring responsibilities in terms of their mentee, and what they owed to that mentee. As one mentor put it, “help advise and guide, moral support, an ear to listen and help think through things together, basically just help and care about the person to help them earn tenure” (SR 97). Another mentor said, “I would say that it's my responsibility to make sure that my mentee feels supported; to give her a place to go for information about department policies or practices; to help her earn tenure; and to help her be an outstanding teacher” (SR 161).

The data are suggestive that faculty mentoring participants experience a trajectory in their mentoring information practices as the mentoring relationship or experience with mentoring increases.

4.4.4 Influence of Social Context on Information Practice (RQ 4)

This section presents the data relating to the fourth research question: How do mentoring participants perceive the ways in which their social context encourages or constrains mentoring information exchanges,

and the mentoring process in general? While social context may be considered at a micro-level as the relationship between mentor and mentee, it may also be more broadly defined at the meso-level as the unit where the faculty members work, or at the macro-level of the college or university. Each level of social context is of interest for the study.

Faculty survey responses often included a reference to the social context of their mentoring information exchanges. Mentees referred to the ease of communication in their department, or commented that they felt they could ask any faculty member for help. As one mentee said, “Our department culture is such that I'm free to ask any questions of any of the faculty, anytime, and people are happy to help” (SR 30). Another said, “My mentor has been at the university for several years and has a similar background as I do. This gives him a good prospective [sic] to advise me on university/college politics and how to navigate it” (SR 236). Another aspect of social context on which mentees commented was the difficulty of connecting with their mentor. As one mentee commented, “When I actually need advice on my career, tenure, and so on -- i.e., something where the mentor would need to spend time looking at my CV and that requires an individual meeting -- meetings can take a month or so to schedule” (SR 30). Another said, “We rarely have official meetings - most of the communication is informal. This means that our interactions are primarily him answering my questions, not him evaluating my overall performance

(meaning I only get mentored in areas that I'm concerned/unsure about, while there may be other topics that I'm unaware of, that I should be concerned about)" (SR 139). In an information diary entry, one mentee commented, "The biggest challenge has been just finding time we're both available to meet and discuss; frequently I'll have questions or concerns in the moment, but if my mentor isn't available, I resolve the concern before I can see my mentor again" (DR 96462).

In contrast, mentors were more likely to comment specifically about their mentee, though a few made reference to the unit. One mentor said, "We have a relaxed atmosphere in my department, so it's easy to chat informally and be frank" (SR 260). Another said, "We have a very open and communicative department" (SR 240). One of the diary participants said, "Working with this mentee is very rewarding because we share many intellectual interests and get along well. I have stakes in helping him to succeed because I hope to have him as a colleague in the long term, and he is able to benefit from my experience (e.g. with department colleagues, with specific publication venues, etc.)" (DR 59349). Another mentor said, "One of my mentees is in a toxic dept in terms of chair and there is not a lot I can do" (SR 113). Mentors also commented on problems with time and availability. One said a difficulty in communicating was, "finding the time to interact more frequently" (SR 215). Another mentor commented that the

worst part of communication was, “probably finding times when we can meet” (SR 123).

4.5 Quantitative Data

Faculty mentoring participants provided detail about their mentoring activities through their responses to the quantitative questions on the survey, as well as through the quantitative elements of the information diary. Most of this data has to do with the first research question informing the study: What are the characteristics of the information practices of mentors and mentees?

4.5.1 Mentoring Relationship

The mentoring relationship has a significant impact on the information practices of the mentoring dyad, as this relationship forms the basic social context within which information is exchanged. If mentor and mentee have a superficial relationship, if they feel themselves to have been thrown together without real consideration of their needs, they will likely experience barriers to their information seeking and sharing.

One of the challenges with formal mentoring is the matching of mentoring partners. Faculty who indicated that their mentoring role was as mentee were asked if they were matched with their mentor by an administrator, and also if the administrator sought their input regarding the match. Three quarters of the mentees (n=68; 76%) responding to this

question were matched by an administrator, and slightly more than half of those (n=35; 52%) were asked for their input before the match was made. Among mentees (n=88; 94%) responding to a question regarding the number of formally appointed mentors they had, the greatest number of mentees (n=58; 66%) had only one, with 21% (n=18) having two formal mentors. Mentors who responded to the question regarding the number of formally appointed mentees that they had (n=106; 85%) were equally likely to have one or two formally appointed mentees (n=37; 35%). Interestingly, almost a quarter of mentors (n=24; 23%) indicated that they had four or more formally appointed mentees. As one might expect, the more experience a mentor had, the more likely he or she was to have multiple mentees. Among faculty mentors who had served for less than two years (n=17; 16%), by far the greatest number (n=14; 82%) had only one formally appointed mentee, and none of these mentors had more than two. Faculty mentors who have served for more than five years (n=69; 65%) were almost as likely to have four or more mentees as to have two. Among these more experienced faculty mentors, 24 (35%) indicated they had two formally assigned mentors, while 23 (34%) indicated they had four or more formally assigned mentors.

4.5.2 Meeting Frequency

The frequency with which mentoring partners meet is of significance to their information practices, as well as being a consideration of mentoring best practices.

Most mentees (n=89; 95%) responded to a question about how frequently they interacted with their mentor. Mentees were twice as likely to report that they met once a month or once a semester, than that they met once a week or less than once a semester. Mentors responded (n=107, 86%) in much the same way, if in slightly lower numbers. Faculty mentors did report that they were more likely to meet monthly, and slightly less likely to meet once a semester. See Figure 12, below, for a more detailed comparison.

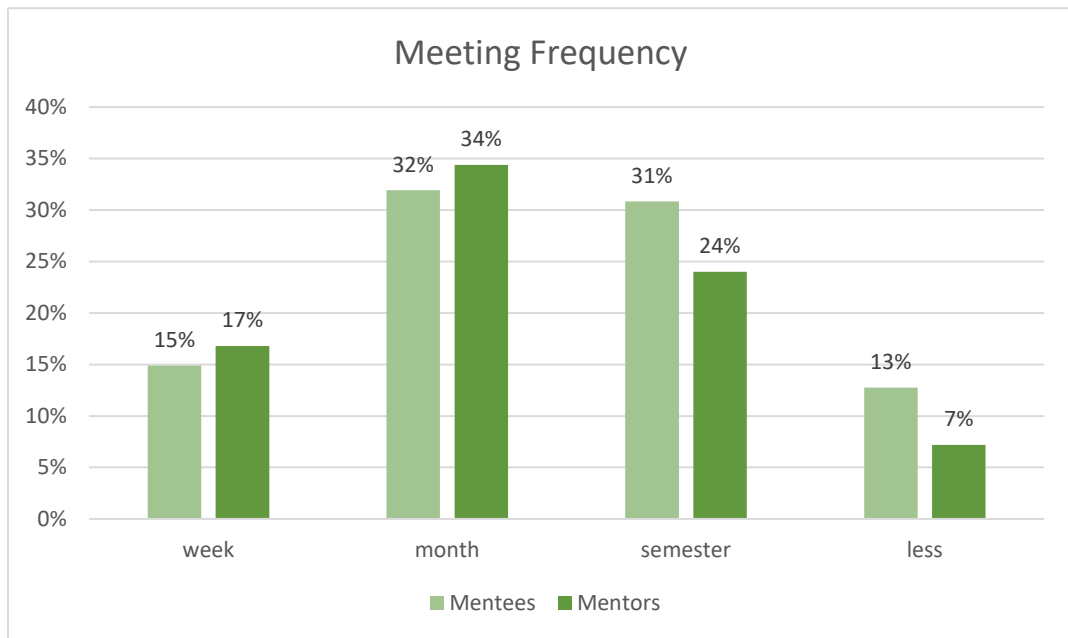


Figure 12: Comparison of Meeting Frequency, as reported by Mentees and Mentors

4.5.3 Topics Discussed

Survey Respondents. Survey respondents were asked about the topics they tended to discuss with their faculty mentoring partners. This question was structured with a list of common topics, drawn from earlier research about faculty mentoring, and survey respondents were asked to check a box by each of the topics they discussed. The topics were:

- Tenure
- Research
- Teaching
- Service
- Work-life balance

- Department politics
- University life

Other was also a choice, and if the survey respondent checked it, he or she was asked to make a text entry. Most mentees (n=87; 93%) responded to this question with at least one topic. Proportionately fewer mentors (n=106; 86%) answered the question with at least one topic. For both mentees and mentors, the most common topics were tenure, research, and teaching. Ninety percent of mentees (n=78) indicated that tenure was a topic of discussion with their mentor, while 86% of mentors (n=91) indicated that tenure was discussed. Figure 13, below, details the comparison between mentee and mentor indication of topics. It is interesting to note how much more likely were faculty mentors to choose “other” as a topic. A brief discussion of those entries follows.

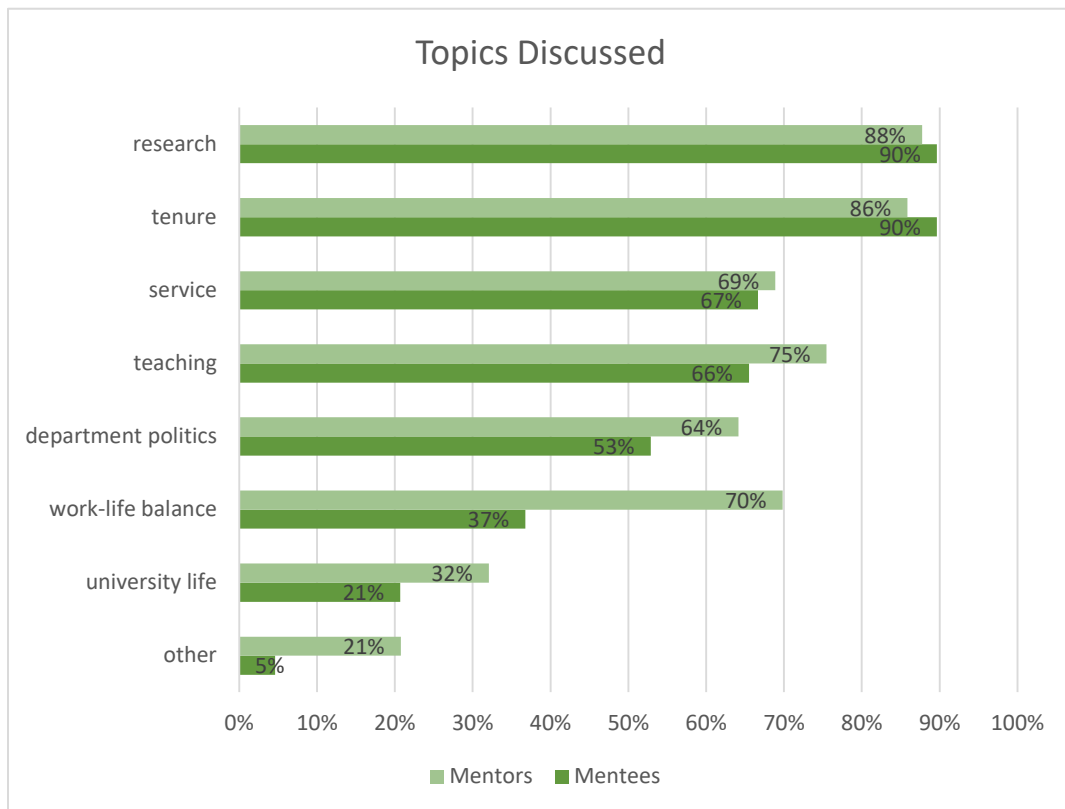


Figure 13: Comparison of topics discussed by mentees and mentors

Survey respondents who chose “other” regarding the topics they discussed seemed to enter topics that were more specific examples of the general topics listed on the survey question. For example, one of the topics listed is tenure, while one of the “other” topics entered was “about the research/service/librarianship requirements for promotion” (SR 158). Another topic on the survey question is research, while the survey respondent indicated the topic was “grant applications and funding” (SR 159), which might be considered as an extension of research.

Diary Participants. Faculty who used the information diary could enter one or more information topics as having been addressed during a particular meeting. Such information topics were stored independently of the diary entry. Seventy-five different topic entries were created as diary entries were made. Each topic entry consists of a general category, such as “tenure” or “teaching”, a more detailed description of the topic, an information class, such as “details / facts” or “interpretation”, and an indication of rhetorical act, such as whether the diarist was recording a question or an answer. Among the 75 topic entries, there were 19 distinct general topic categories, which were then collapsed into ten topic categories to facilitate analysis. See Appendix E for the list showing the original topic categories and the collapsed categories.

Users of the diary were prompted with three default topic categories – tenure, research, and teaching – until they began to build their own topic lists. Tenure, as suggested by the analysis of survey data, was the topic most commonly addressed (n=38; 51%) in information diary entries, with research and teaching following. See Figure 14, below, for more details regarding the topics listed in information diary entries.

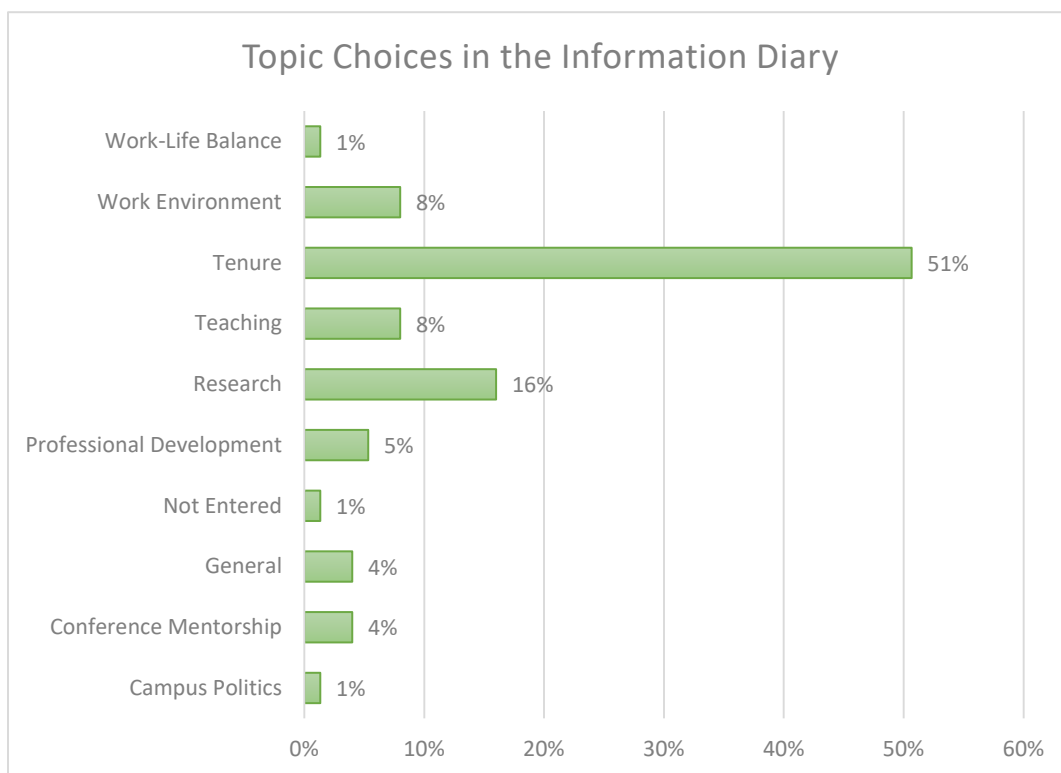


Figure 14: Topic Choices in the Information Diary

Diarists were also asked to indicate the information class of the topic they were entering, as defined in my theoretical framework. Among the 75 topic entries, diarists were most likely to indicate a class of “detail / fact” (n=28; 37%), which was defined in the diary as a topic about which there is little question, or no room for doubt. The information class of “interpretation” (n=23; 31%), which was defined in the diary as a topic where the mentor’s previous experience of similar situations or questions adds depth and richness to the information exchange, was almost as likely to be chosen. See Figure 15, below, for more detail about the information

classes chosen by faculty mentoring participants as they used the information diary.

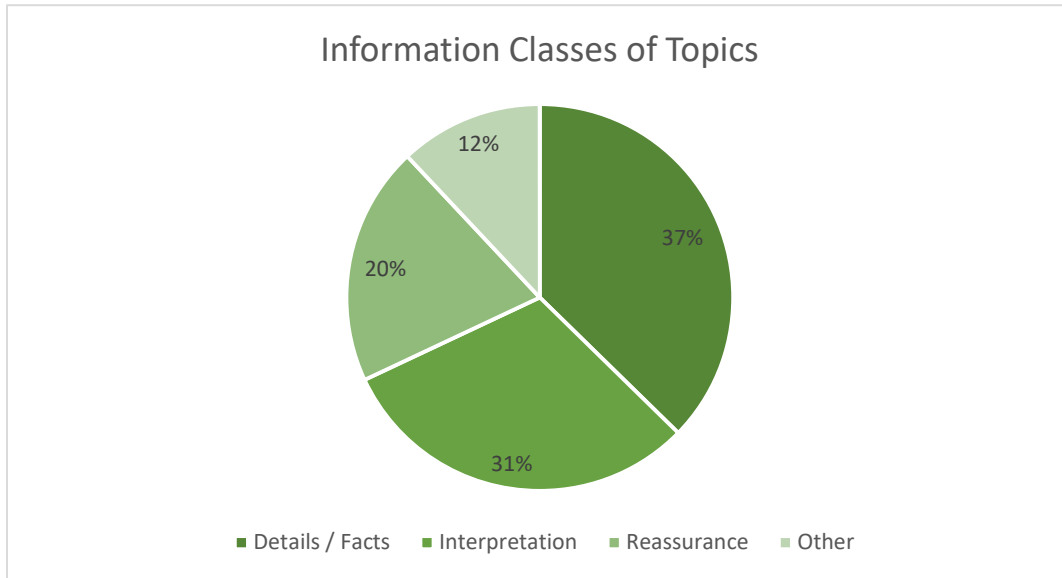


Figure 15: Information Classes of Topic Entries

4.5.4 Diarist Responses to Reflection Topics

Faculty mentoring participants who used the information diary were presented with a reflection prompt each time they made a diary entry. There were ten different prompts, and the diary was created to randomly select one of the ten when the participant opened the diary form. Faculty entered reflections in 69% (n=47) of the diary entries. While the full text of each prompt is provided above (see Section 3.4.3), the prompts are summarized in Table 3, below, along with the number of times each was presented and responded to.

Table 3: Frequency of Diary Reflection Prompts

Prompt	Presented	Responded	%
<i>Expectations of mentoring partner</i>	1	1	100%
<i>Philosophy of mentoring</i>	7	3	43%
<i>Challenges with mentoring partner</i>	11	7	64%
<i>Goals for mentoring relationship</i>	10	7	70%
<i>Rewarding / Frustrating aspects of partner</i>	8	5	63%
<i>Satisfying / Dissatisfying aspects of meeting</i>	9	8	89%
<i>Past experience of mentoring</i>	9	7	78%
<i>Learning about mentoring</i>	5	4	80%
<i>Learning from mentoring partner</i>	4	3	75%
<i>Difficult topics for discussion</i>	4	2	50%
All Prompts	68	47	69%

4.6 Conclusion

This chapter examined the data gathered with reference to the research questions guiding the study. The major findings for each research question are summarized below.

With regard to the characteristics of the information practices of mentors and mentees, one central aspect, as identified in the findings, was the transmission of culture. For mentees, the most important part of the culture was what they needed to do to get tenure. Meanwhile, mentors indicated that explaining culture to their mentees was a big part of their responsibility. Elements of the information exchanges between mentoring

partners are the relationship between the partners, the channel (e.g., email, phone, quick meeting), and the topic, which is almost always related to meeting the unit standard for obtaining tenure. Support is an essential part of the mentoring relationship, as well as an aspect of mentoring information practices, and both mentees and mentors described the support they were receiving or offering as essential.

Mentors and mentees seemed to feel the work they were doing was useful, and that their communications were effective. Both mentors and mentees emphasized the importance of honest feedback – whether giving or receiving. There was equal emphasis from both mentees and mentors on the importance of paying attention to what is being said, and on the importance of keeping an open mind. Finally, mentees said the most useful part of mentoring for them was getting information about tenure. Meanwhile, mentors said the most useful part of the mentoring they did was to help the mentee understand the culture and expectations of the department and the discipline.

The findings suggest that there is some change in information practices over time, as the mentoring relationship progresses. Mentees are initially seeking rather specific information, such as how to build a career plan. As they gain experience, mentees have their own ideas about specifics like drafting grant proposals or reviewing publications, so they describe their information seeking in more general terms. Mentors who

have less experience could also be considered to focus on the specific, since findings suggest they are more focused on their mentees as individuals, rather than thinking of them in terms of the culture they seek to enter. Meanwhile, mentors with more experience seem to emphasize the unit over the mentee, so that they are thinking of what the mentee will add to the unit, and how best to describe unit culture to the mentee. This suggests that as the faculty mentor gains experience, he or she shifts to focus on the community the mentee is seeking to join.

Both mentors and mentees seemed to feel constrained by their social context to the extent that they were too busy to engage in mentoring activities. Otherwise, mentees and mentors described similarities or points of interest they had in common with their mentoring partner, and suggested that their common interests made their mentoring interactions more enjoyable.

Generally, these data provide a picture of the characteristics of the information practices of faculty mentoring participants, how faculty perceive the usefulness of their information practices, how those practices may change over time, and how faculty perceive their social context to influence their mentoring information practices. While the characteristics of information practices differ slightly between faculty mentor and faculty mentee, the data suggest similar attitudes toward the utility of information practices, and a similar sense of the influence of social context on

information practices. The biggest difference between faculty mentors and mentees might be seen in the way the data show changes in information practices over time. Given that faculty mentees tend to be younger and newer to the profession, with concurrently less exposure to mentoring practices, it is consistent that their information practices might change as they move toward tenure. Similarly, faculty mentors with less experience are likely to have fewer years at rank, and thus potentially a greater sense of their mentees as individuals, rather than the influence and value their mentoring brings to their unit and institution, as represented by faculty mentors with more experience.

The next chapter will present a discussion of the significance of these findings as considered within the theoretical framework described previously and the mentoring information exchange model.

Chapter 5: Discussion

Mentoring, which may be defined as dynamic and situated information exchanges between an individual with experience and knowledge, and an individual with less experience and knowledge (e.g., Higgins & Kram, 2001; Xu & Payne, 2014), is an important tool for professional development and the socialization of new group members. So much of mentoring takes place in the privacy of the relationship between mentor and mentee that mentoring becomes difficult to describe explicitly (Haggard et al., 2011). On the other hand, mentoring must always involve information transfer between mentor and mentee, and that information transfer can be used to describe mentoring. This study was designed to identify the characteristics of the mentoring relationship as described by information exchanges between mentoring partners. I propose that these mentoring information exchanges are an effective way to characterize the mentoring relationship as a necessary precursor to developing training for both mentors and mentees.

This study has investigated the information practices of faculty mentoring participants, as well as the influence of social context on the information exchanged between mentoring partners. We are now able to characterize the types of information exchanged, and we have some understanding of how the mentoring might cover different topics at different times in the process.

Overall, the findings of this study support the theoretical framework proposed earlier. According to that framework, the mentoring relationship involves information exchanges originating on either side of the partnership. Mentors and mentees share and seek information with more than one person – both within and outside of their formal mentoring relationships – as it is common for faculty mentors to work with more than one mentee, and it is increasingly likely for faculty mentees to have more than one mentor. The social context in which the mentoring takes place has three zones or phases: the context of the relationship between the mentoring partners, or the micro-context; the larger social context of the unit or department, or the meso-context; and finally the social context which reflects the expectations of the discipline or the university at large, or the macro-context.

This chapter begins with a recapitulation of the study's central findings. Next, the chapter will evaluate the degree to which this study's findings provide support for the initially proposed theoretical framework, and the ways the framework might be revised to represent the findings more accurately. Finally, the limitations of the study will be described.

5.1 Recapitulation of Findings

This section will summarize the main findings of this study, comparing and contrasting them with the literature in each of the following major topic areas: (1) the mentoring relationship, including the

social context in which it takes place; (2) mentoring best practices; and (3) the information practices of mentoring, namely the information seeking and sharing which is a regular aspect of every mentoring partnership, and how that information behavior is mediated by social context.

5.1.1 The Mentoring Relationship

The mentoring relationship has certain characteristics that influence the mentoring information exchanges taking place. The mentoring relationship is so central to the process that it is almost easy to overlook its qualities. Mentoring was originally conceived in terms of its functions, whether psychosocial or career focused (Kram, 1983, 1985). However, the use of the term ‘function’ in this context may suggest to us that the same input will always produce the same output, which is far from the truth.

A more useful conception of the mentoring relationship is that it is developmental (Higgins & Kram, 2001), and generally involves multiple relationships. As proposed by Higgins and Kram, the early understanding of mentoring was based on an individual remaining in the same organization, but as the work environment changes, so mentoring changes to keep pace, as with the idea of mentors obtained from outside the immediate work environment, and with the idea of mentoring networks.

Participants in this study of faculty mentoring clearly perceived their relationships to be developmental. As one mentor said, “Yes, my philosophy is developmental. I provide a lot of scaffolding and structure

(weekly meetings) in the beginning but as I see the mentee becoming autonomous and successful I step back and wait to meet when the mentee suggests it, or I know of a benchmark coming up soon (e.g., academic review)” (SR 67). Another described the process as, “I try to help my junior colleague understand the departmental expectations, to prioritize efforts, and negotiate challenges related to funding, publishing, and teaching” (SR 269). Faculty also saw themselves as part of a network engaged in mentoring information exchanges, whether as the mentor or the mentee. Several mentors and mentees referenced their mentoring committees or that they had more than one mentor. One mentor commented, “Mentors all have their own perspectives that should be shared with the mentee. However, they should also convey that other perspectives exist. The relationship is most productive if there is a non-formal relationship, in addition to the formal mentoring” (SR 74).

Mentoring relationships have also been defined as progressing through various phases, such as initiation, cultivation, and separation (Kram, 1983). These phases are useful for describing the relationship and predicting relationship events, but it is also important to remember that the phases are dynamic (Kalbfleisch, 2007). Faculty mentoring participants experience changes in their attitudes and approach to mentoring, even though they might still be considered as in the cultivation phase (i.e., mentee is learning from mentor). Mentoring participants also change as

they move from one phase to another. The relationship also changes in different ways for different mentoring partnerships (McGowan, Stone, & Kegan, 2007). Regarding her responsibilities as a mentor, one survey respondent commented, “It varies a lot, depending on the personality of the person and depending on where that person is” (SR 32). Another mentor described the dynamic phases of mentoring when commenting about communication with his mentee: “I was also her PhD advisor. We have a long-standing and strong mutual respect. She is independent minded. But I want to ensure that she does not feel that she's in my shadow” (SR 17). With this single comment, the mentor encapsulates the changing mentoring relationship – first as PhD advisor, now as faculty mentor, but working to develop the mentee’s sense of independence.

Mentoring relationships reflect that one learns about mentoring by experiencing it. This concept is also called the mentoring schema (Chandler et al., 2011). The concept is significant to any study of mentoring because it may facilitate understanding of the mentoring practices in which an individual engages. Study respondents seemed to feel strongly that they were following practices they learned earlier. For example, one respondent said, “I learned about the ‘business’ of being a successful academic from a professor I worked for as a post-doc. I want to pass on the unwritten, strategic lessons I learned from that professor to give untenured faculty members the tools and orientation to be successful” (SR 117). Another

described her mentoring philosophy as, “to just be a caring helping person and help them in ways you were helped (or wish you would have been helped)” (SR 97).

The mentoring relationship, and programs of formal mentoring, may also be considered as communities of practice (E. R. Smith et al., 2013). The definition of a community of practice describes a group of individuals who are engaged in a joint enterprise, and mutually engaged in specific practices (Lave & Wenger, 1991; Wenger, 1998b). Because it emphasizes the transmission of informal and often tacit information (Lave, 1991), the community of practice model could be useful for understanding mentoring processes. Survey respondents made several comments that evoked the community of practice, such as, “The most important thing that my mentor does with me is simply explaining the in's and out's of academic librarianship, the things that are outside the scope of general library work but are essential to your assessment as a permanent-track librarian” (SR 68). Another mentor commented, “All senior faculty should mentor junior faculty...they must bring the more junior faculty into the community and help them navigate the professional and political aspects of academe” (SR 71). Another respondent described the mentor’s responsibilities as, “When first assigned to mentor someone, make certain they feel integrated into the social fabric of the department. Explaining formal and informal

norms, key criteria on which they are assessed and evaluated, etc.” (SR 129).

5.1.2 Mentoring Best Practices

Studies of formal mentoring suggest that there are certain best practices that can help the organization provide mentoring that participants feel more satisfaction with. Demonstrating a clear organizational commitment to mentoring is one such best practice (e.g., Finkelstein & Poteet, 2007; Guise et al., 2012; Parise & Forret, 2008). At the university where this study was conducted, mentoring must be provided for all tenure-track faculty, by policy. Organizational commitment is implicit in such a policy. However, at Mid-Atlantic University, the policy amounts to an unfunded mandate, as there is no provision for mentoring training and no support – at least at the university level – for those engaged in mentoring. A lack of organizational support is echoed by the sheer numbers of study respondents who indicated that lack of time was the biggest barrier to good communication with their mentoring partners. As one mentor said, the challenge was “Finding the time in everyone's schedule to give thoughtful feedback” (SR 212). Another described communication challenges this way: “Schedules are generally packed and setting time aside is difficult” (SR 58).

Programs of formal mentoring are generally representative of, or at least strongly influenced by, the organization that sponsors or administers

the mentoring. Studies of mentoring best practices also suggest that organizations develop goals and expectations for mentoring that are linked to the organization's professional development goals (Dawson, 2014). Some study participants indicated that their mentoring practices follow guidelines established by the academic unit. As one mentee described his responsibilities, "Making sure that I maintain communications with my mentor per guidelines of our department" (SR 68). Another said that both his and his mentor's responsibilities were outlined in the department's onboarding manual (SR 133).

Formal mentoring programs should also provide training for mentors (Allen et al., 2006b; Dawson, 2014), and take care to recruit mentors, rather than requiring participation (Donnelly & McSweeney, 2011). Study participants indicated that in some units, a framework for mentoring was created for participants. One mentor noted that within the framework, "my role is to give some general advice, to visit classes of the junior advisee to assess the quality of teaching and attitude towards it; and then in addition to monitor less formally the mentee's progress in research and application for research funding and discuss research topics of common interest" (SR 276). Another suggested, "I believe senior faculty have a responsibility to mentor and assist newer or younger faculty and help prepare them to be successful and future leaders" (SR 123). However, as one mentor said, "I live in fear of giving bad advice" (SR 19), which

would seem to suggest that training would be helpful. Another said, “My responsibilities are seemingly set by the institution and department. Taking part in a formal mentoring process seems to balance helping the mentee and protecting the institution. I don’t much like the second part” (SR 157).

The survey responses from study participants seem generally to support the theories expressed in the mentoring scholarship that was reviewed earlier and that forms a part of my theoretical framework. However, these responses must also be considered in light of the information practices they imply. The term “information practices” was not used in survey questions, though the questions address aspects of information practices. Therefore, while study participants were not asked explicitly about their “information practices”, their responses to the survey questions, as well as their responses in the information diary, can be taken to represent dimensions of information practice. These dimensions, such as frequency, type of information exchanged, and topic, can themselves be used to represent the mentoring relationship.

5.1.3 Information Practices of Mentoring

As noted earlier, mentoring involves the “informal transmission of knowledge, social capital, and psychosocial support” (Bozeman & Feeney, 2007). This process of transmission may easily be categorized as a form of information practice, which is defined as information seeking and sharing

in a social context (Savolainen, 2007). These information practices potentially provide a way to characterize the mentoring relationship, and further to develop more effective training for mentors and mentees. What faculty mentoring participants say about their information seeking and sharing can also indicate areas where greater understanding would benefit the partnership.

There are two ways to consider the information practices of faculty mentoring participants:

- 1) As leading toward a specific goal – to achieve tenure – which may be linked to the one question / one answer model of early information studies (Dervin, 1976).
- 2) As leading to the socialization of the junior faculty member, whether as a member of the community, or as a member of a discipline or department, which is akin to the community of practice model of mentoring (E. R. Smith et al., 2013).

While it is clear that faculty mentees must have an understanding that achieving tenure is a multi-dimensional process, they are more likely to refer to their information seeking in terms of that one goal, as if there were a single question they could ask. Several mentee survey respondents indicated that their only expectation of their faculty mentor was that he or she help them to get tenure. In addition, tenure was the most commonly discussed topic based on both the survey responses and the diary.

Otherwise, mentees described their information seeking in different ways, such as describing the mentor as a “sounding board when I have to make difficult decisions” (SR 93) or “Someone to talk to when I am struggling with department politics” (SR 150). Another mentee said he was seeking “insight as to how promotion works: what do people actually care about when reading promotional materials” (SR 6), while another said of his mentor, “He is very dry and jaded with the process. It’s not always encouraging to be reminded of the dark corners of the profession” (SR 28).

Meanwhile, faculty mentors seem more likely to think of their mentoring information practices as leading to the socialization of the mentee as a member of the discipline or department, and they described their information seeking and sharing in ways that were more expressive of this process. One mentor said his responsibilities were “mainly to offer my experience with teaching and Ph.D. student supervision and recruiting” (SR 146). Another mentor said the most important part of his work was “anything I can do to make my mentee fully aware of the expectations my department and the profession have of him” (SR 276). Faculty mentors indicated that their expectations of their mentees had more to do with the mentee paying attention to the mentor’s advice, or that the mentee take an active part in their development as a scholar. For example, one mentor said he expected his mentee to “be open to my advice and be committed to developing professionally.” (SR 339). Another said she expected her mentee

to be “responsive to suggestions, to let me know when things come up that need my feedback, to be proactive, to work hard” (SR 67).

Regardless of their attitude toward their mentoring information practices, both mentors and mentees engaged in multiple information exchanges, which include the dimensions outlined in the framework proposed earlier:

- 1) Broad Topic
- 2) Detailed Description
- 3) Information Class
- 4) Rhetorical Act

The information exchanges were also mediated by the social contexts in which they took place.

Mentoring participants are regularly engaged in both information seeking and sharing, and these actions are mediated by social contexts as created by the mentoring relationship, by the unit that has organized the mentoring program, and even by the larger context of the discipline or the university.

5.2 Support for Framework

The theoretical framework proposed earlier describes a common element of mentoring in any social context and in any phase of the mentoring relationship. Regardless of the circumstances of the mentoring partners, they must exchange information in order to engage in mentoring,

and that information exchange will always include the dimensions outlined. The findings of the study demonstrate that the Mentoring Information Exchange is a constant in an otherwise highly variable system. However, it is clear that there is variation in the Mentoring Information Exchanges, over time. Mentoring partners are likely to focus on different topics, and to address those topics in different ways, as the relationship progresses. The framework would represent the findings more accurately if this variation over time were included in some way.

5.3 Limitations

Due to the research design and methods employed, this study has some limitations. The most significant limitation to this study is that the data collection instruments have never been validated. There is no way to know that responses to the questions asked in these instruments really represent the concepts I am investigating. Likert-scale response questions on the survey of faculty mentoring participants were written to be as simple and objective as possible. Free-response questions were also designed to be straightforward, to the extent possible with any question written to seek qualitative data. The survey of faculty mentoring participants was pilot tested with faculty mentors and faculty mentees.

However, the survey could capture only point-in-time information about faculty mentoring participants, though mentoring must necessarily be an on-going process. This created a particularly significant limitation

with regard to my third research question: How do mentoring information practices and participant perceptions of those practices change over time, as the mentoring relationship progresses? Because it would be unrealistic to expect faculty mentoring participants to discern and describe changes in their mentoring practices over time, I presented data on the differences in attitude displayed by faculty with different levels of experience in mentoring. However, this question could be answered more comprehensively by a longer-term study.

Validity for the information diary is a more complicated proposition. In its original design, the diary was pilot tested with faculty for usability and to see what questions arose as faculty used it. Usability comments from the testers were addressed. However, the diary, and the data it was designed to collect, is a new way of looking at faculty mentoring, and it was presented to participants almost entirely in writing. Therefore, the instructions and error messages for the diary had to strike a difficult balance between clarity and brevity.

Additionally, there were certain challenges inherent in using the information diary as a data collection tool. The first had to do with the mentoring participant's perception of what constitutes mentoring. Based on survey responses and interview transcripts, faculty mentoring participants often seem to feel that mentoring involves a formal meeting, with an agenda and explicit questions and answers. One interviewee

described an information exchange she had had with a mentee, and then said ‘but that wasn’t really mentoring.’ Other respondents seem to have the same reluctance to call what they are doing mentoring. This suggests that participants in this study may have had many information exchanges with other mentoring participants, without including them in the diary. Since I was not present or in frequent contact with the study participants, I had no way to convince them to include information exchanges that involved mentoring information, but that didn’t meet that individual’s criteria for mentoring interactions. Another challenge involved the personality type of someone who keeps a diary. Reflecting in writing about the events of the day is a habit. It was not possible for me to inspire my participants to build that habit over the course of the study.

Another limitation was that participants in the information diary were engaged with the diary for a brief period of four to six months, and many participants only made one or two entries. The data gathered with the diary does not therefore truly represent the growth and change of the long-term relationship between the mentoring partners.

The study relies entirely on self-reported data, which may be limited in accuracy and/ or comprehensiveness. Participants may have attempted to discern the researcher’s purpose and then responded to questions accordingly (e.g., hypothesis guessing). Additionally, they may have censored themselves as a result of evaluation apprehension. While not

every faculty member may value mentoring equally, all faculty members at MAU are likely to recognize that faculty mentoring is required by policy, and thus is supported at the highest levels of campus administration. This recognition may have led respondents to report themselves as more engaged in mentoring activities than was really the case.

Researcher expectancy effects is another potential threat to the validity of this study's findings. My preconceived notions about the importance of faculty mentoring could have been communicated to participants and then influenced their responses. In an attempt to limit this type of bias, the researcher strived to word questions in an open-ended and neutral manner.

This study is also potentially limited by selection bias. The invitation to participate in the survey and the information diary was sent only to tenured and tenure-track faculty at Mid-Atlantic University. Faculty respondents were likely already interested in mentoring or conceived that mentoring was of value to their department or discipline. There was no way to limit selection bias, because faculty could not be recruited in any other manner. Finally, the sample sizes for both the survey and the diary are relatively small. Therefore, these findings are not generalizable beyond MAU.

A further limitation to this study is that the sample is likely biased, because the survey and the information diary will appeal more to faculty

mentoring participants with certain attitudes or strong feelings about their mentoring practices. More faculty mentoring participants completed the survey than used the information diary. However, it is also the case that the intersection between the quantitative data and qualitative data may be affected if a faculty mentoring participant completes the survey and perhaps one diary entry, but then withdraws or drops out of the study. The loss of such participants might change the composition of the sample, affecting any inferences that were based only on participants who complete the whole study.

In the chapter which follows, the implications and contributions of this research will be considered, along with some ideas for future research which address the limitations listed above.

Chapter 6: Conclusion

This chapter begins with a discussion of the practical implications of the results from this study. A consideration of the theoretical, methodological, and practical contributions of this study follows. Finally, I provide some suggestions for future research in this area, as well as some concluding remarks.

6.1 Practical Implications

The findings from this study confirm that faculty mentoring, taking place within a relationship, involves information exchanges that originate on either side of the partnership. As noted by several of the respondents to the survey, information flows in both directions, rather than exclusively from mentor to mentee. Despite our perceptions that the “real” mentoring happens in the black box of the privacy of the mentoring dyad, the data also demonstrate that the mentoring information exchange is shaped by its social context, whether that is the unit, the discipline, or the university at large. The study data indicate great variation in the practice of mentoring across the sample, but they also indicate that the transfer of information is a constant in mentoring.

This transfer of information, or mentoring information exchange, gives us a way to evaluate the mentoring that takes place within a mentoring dyad. The mentoring information exchange is a measurable

element of the process that carries none of the emotional baggage often found in other characterizations of mentoring. That is, by describing mentoring in terms of the information exchange, there need be no reference to whether the mentoring partners should have any kind of emotional connection. Therefore, there is no burden on the mentor to “make” friends with his or her mentee, or vice versa. As indicated by several of the respondents, the idea of an administratively arranged friendship is a little distasteful; faculty would likely prefer to find their own friends. One mentor said, “Mentoring should not be confused with personal relationships, even though the content can be personal” (SR 104). A mentee said he was, “not sure what I can and cannot discuss with [mentors] and unsure what are ‘safe’ and ‘unsafe’ topics” (SR 201).

Using the information exchange as the atomic element of the mentoring process also means that some sort of basic catalog of information exchanges – specifically, the broad topic and more detailed description – can be created, whether by the unit, by the mentor, or by the mentoring partners working together. Then there is little need for the mentoring partners to worry about their relationship – they have only to address the recommended information exchanges. And by the time they’ve finished, they will have either become friends, or not. But because their mentoring is measured according to the information they’ve exchanged, rather than by the unquantifiable depth of a friendship which perhaps

neither of them really wants to have, they are likely to have a more satisfactory perception of mentoring than they might otherwise.

The theory of information practices, or information seeking and sharing in a social context, provides a way to describe the mentoring information exchanges. These exchanges can be considered across all the dimensions identified in the theoretical framework I proposed:

1. Broad topic: one or two words that generally describe the topic of what was discussed
2. Detailed description: the actual discussion
3. Information class: whether the information exchanged is an objective fact, an interpretation, a statement of judgment or evaluation, a statement with affective qualities, such as reassurance, or some combination of these
4. Rhetorical act: question, answer or discussion

However, for the purposes of defining the expectations of a mentoring relationship, only the broad topic and more specific description are really of value. It is unlikely that one could predict the information class (e.g., whether a topic would be addressed by a statement of objective fact or a statement of judgment or evaluation), or even the rhetorical act, without concrete details of the nature of the mentoring relationship and the type of the information practices in which the dyad engages.

6.2 Contributions

This study has led to a number of contributions: theoretical, methodological, and practical. These will be identified and described in the sections that follow.

6.2.1 Theoretical Contributions

Generally, this study provides additional confirmation for several of the mentoring theories referenced. For example, the data demonstrate the utility of conceptualizing mentoring as a developmental relationship, rather than a relatively simple process that is much the same for every participant. Survey respondents also indicated that they mentor or receive mentoring as part of a network. It is less common now to find a mentee with only a single mentor, or a mentor working with only one mentee. Survey and diary responses also support the theory of explicit mentoring phases and how participants move through them, as well as the idea that mentoring relationships grow and change even within a single phase.

The study provides perhaps its most important theoretical contribution with its extension of the theory of information practices to the description of mentoring. While mentoring is often considered in simple terms of the relationship between the mentoring partners, we benefit from consideration of the information exchanged between the mentoring partners. Particularly in higher education, where the nature and quality of

the information exchanged can have a significant impact on the mentee's success as a scholar and faculty member, this study shows that attention to information practices can give faculty a way to evaluate the mentoring they are providing or receiving. The theory of information practices is also shown to provide a useful means of characterizing the mentoring information exchange, as it references all the essential elements, such as the topic, details, and information type, as well as the social context in which the information is exchanged. By providing the means to describe the mentoring process more explicitly, this application of the theory of information practices may make it easier to develop training and evaluation tools for mentors and mentees. The Mentoring Information Exchange Model suggests that there are constants in every mentoring relationship.

6.2.2 Methodological Contributions

This study makes several methodological contributions to research on mentoring and information practices. First, the study confirms that mentoring should be studied longitudinally, rather than at a given point in time. The mentoring relationship is always in flux as mentoring partners work together, and effective methods must gather data as the relationship progresses.

The information diary, developed for this study, is a new approach to studying mentoring, and perhaps the most significant methodological

contribution. Use of the diary facilitates the longitudinal study of the mentoring relationship, because the diarist can enter mentoring details and perhaps reflect on them in real time, rather than being asked to look back after the mentoring has ended. The diary also gathers both qualitative and quantitative data, as the mentoring participant is not only encouraged to reflect on his or her mentoring practices, but also to report the topics addressed in the meeting, as well as other quantitative details, such as the duration and location of the meeting. Diaries have been used in other studies, but the information diary was constructed as a web application, to increase its usability and accessibility. For example, participants could take advantage of an auto-complete function when entering several of the details of the mentoring meeting, such as information about the mentoring partner, and topics discussed during the meeting. The diary was also intentionally constructed to be accessible on a mobile device, as well as on a desktop computer. Use of the diary was thus intended to evoke the simplicity of posting a comment to social media. Finally, the data gathered by the diary was structured in a way that facilitated its analysis; there was no need for the researcher to transcribe entries or make any adjustment to them.

6.2.3 Practical Contributions

Mentoring is a both a developmental and a creative activity, as the practice of mentoring or being mentored is so varied from one mentoring

partner to another. Use of the diary provides mentoring participants with an opportunity to reflect on their mentoring activities, as noted above. This reflection may lead the mentoring participant to examine his or her goals or expectations, or it may lead to the development of ideas of new topics to introduce in the mentoring discussion.

Each diary entry includes a varying reflection prompt. Some of the respondents used the reflection prompt to lead their writing, while others just wrote about that which concerned them. Some of the diary participants expressed appreciation of the opportunity for reflection. As one of the respondents put it,

It was nice to feel like I had -- you know how when you're super young and you had a real diary, like one of those locked diaries -- you feel like you have a little friend who's just there listening and waiting for you. And I think it's nice to feel like -- especially when it's either disappointing or frustrating -- okay, I have a neutral party who's waiting to hear about this. And I would write it. (DR 2736)

Another diary respondent said, "I like that reflective stuff. So I tend to be fairly introspective about things like this anyway, but the reason I'm introspective about things like this anyway is because I find things like this valuable" (DR 59460).

Additionally, faculty mentoring generally takes place over several years, with mentoring meetings competing with other faculty activities that

may seem more significant to the faculty member. Use of the information diary gives the mentoring participant an organized way to record the topics of discussion and then review them prior to the next meeting, even if that meeting takes place six months later.

The mentoring information exchanges identified in this study can also be used to develop a typology that could inform the development of training for mentors and mentees, as well as a written expression of the goals and expectations a unit has for its mentoring participants.

6.3 Suggestions for Future Research

As described above, the research design and methods employed for this study have some limitations, which could be addressed by future studies. For example, a similar study might gather data from more than one university. At Mid-Atlantic University, mentoring of tenure-track faculty members is required by policy. How do attitudes and practices change in an institution where mentoring is not required? MAU is also a relatively distributed institution, where each of the twelve colleges has significant control over its internal organization, and thus mentoring practices vary distinctly from college to college. How would attitudes toward mentoring be different at an institution where mentoring is organized in a more central fashion?

It would also be of interest to engage mentoring participants to use the diary over a longer time period. The diary was designed to facilitate the

collection of data points which together make up a more complete picture of a process that takes place over time. Many of the study participants who made diary entries did so only once or twice, because they did not meet with their mentoring partners more often over the extent of the study. A longer period of data collection could offer a more complete picture of the progression of the mentoring relationship, as well as providing a better sense of the kinds of topics addressed by the mentoring information exchanges. Additionally, it would be interesting to collect the perceptions of each member of a mentoring dyad, in order to compare the reflections and other comments of the mentor with those of the mentee.

A study might be made of the mentoring information practices in other mentoring contexts (such as K-12 educators or medical professions), using the combination of the survey of attitudes toward mentoring and the information diary. The diary provides us with a useful tool for examining mentoring over time, as it takes place, without placing an undue burden on study participants. Finally, it is likely that there are additional significant factors relating to information behavior in mentoring. The information diary could be repurposed to examine these other factors.

6.4 Concluding Remarks

Mentoring is generally recognized as a valuable means to socialize new employees and train them in areas that involve more interpretation and judgment calls, rather than simple knowledge of facts. Mentoring is

frequently used as such a tool in the medical professions, as well as with educators. The challenge, for mentoring participants and for those who rely on it as a means of integrating new employees, is that mentoring varies so considerably across so many dimensions, that it seems impossible to describe just what mentoring involves, and thus how best to do it.

All mentoring activities involve the exchange of information, however. In fact, mentoring can hardly be considered to have taken place *without* the exchange of information. This study confirms that mentoring information exchanges can be an effective way to describe the mentoring relationship. If we can describe the relationship, it will be easier to develop training because we can use the description to create objectives and goals for the mentoring process. Thus, mentors will not have to rely on the 'friendship' model in order to accomplish their goals and meet the expectations of the sponsoring unit. Using the framework described above, we can describe the process of mentoring in an explicit fashion, according to the information exchanged between the mentoring partners. Faculty mentors and mentees who participated in this study had expectations and understanding of the work they were doing that were occasionally strikingly different.

Of course, there are challenges inherent in a system where one must seek information from a person, rather than from a document. There is a greater risk of embarrassment, as the person who has the information may

mock the information seeker, even if only internally. This tension is more pronounced in the context of higher education, where knowledge and expertise are so highly valued. The faculty member who is seeking information may feel he does not know the right question to ask. The faculty member who is seeking information also faces a potential loss of social capital when she asks a mentor a question. The act of information seeking in this context is an admission of vulnerability to someone who is likely the faculty member's senior, likely an expert in the field, and likely to vote on the faculty member's tenure case. All of these aspects create an extra barrier to information seeking on the part of the faculty mentee. On the other hand, if the mentoring is structured according to a rubric of mentoring information exchanges developed from the information practices of other mentoring partners, the mentor will have a sense of what other mentees have needed, what other mentees do or don't know about a subject, rather than feeling like her mentee is the only one who ever didn't know something as simple as the correct way to lay out a CV. This mentor may then be more willing to engage in information sharing, and less likely to be critical of the mentee's lack of knowledge.

The organizations that rely on mentoring to improve job satisfaction and intent to stay, to preserve institutional culture and knowledge, as well as to improve diversity, should consider every possibility that is likely to improve the quality of the mentoring provided. As has been demonstrated

by this study and others, faculty mentoring participants do experience barriers to information seeking and sharing, often as a result of the social contexts in which the mentoring takes place. Reconsidering mentoring as a process of information transfer, rather than as a relationship such as friendship, can remove some of those barriers. Mentoring is a powerful way to integrate new faculty members to their communities, with demonstrated success when it is carefully implemented. Given the importance of new faculty to the continued growth of scholarship and education, the mentoring they receive should be of the highest possible quality.

Appendices

Appendix A: Email to Faculty Mentoring Participants

Dear Dr. Doe:

I am writing to ask you to participate in a study of the mentoring of faculty at the University of Maryland. Mentoring is a valuable means of support for new faculty, but little is known about the characteristics of a successful mentoring relationship. I am conducting dissertation research on information-related aspects of the mentoring relationship, with the goal of developing a model of how information is exchanged between mentor and mentee. I propose that such a model would help us to develop more effective training for both mentors and mentees. I hope you will be able to complete the survey linked below, because as a tenured faculty member who is providing mentoring, or a tenure-track faculty member who is receiving mentoring, you have valuable insights about mentoring on campus. The survey should take no more than 20 minutes to complete, and your responses will be kept completely confidential. Your employment status at UMD will not be affected by your participation or non-participation in this study. The data collected will be used in aggregate by the Office of Faculty Affairs to support mentoring best practices on campus, and will form a part of my dissertation.

Upon submitting your survey responses, you will be invited to participate in the mentoring information diary. This is an online data collection tool designed to help you remember what you talk about with your mentoring partners. Knowing what you have talked about will help me describe the mentoring process more explicitly, but it may also help you as you engage in mentoring activities.

If you have any questions, please feel free to contact me. Thank you for your time.

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Appendix B: Survey of Faculty Mentoring Participants

The same survey link was sent to faculty mentors and faculty mentees. Based on the response to the question about whether the faculty member is mentoring or being mentored, the survey questions were modified to reflect the faculty member's role as mentor or mentee. In the questions listed below, the questions for mentors are listed in the left-hand column, while the equivalent question or questions for mentees are listed in the right-hand column.

Survey Introduction

This survey is intended to gather data regarding your formal mentoring activities. With the term "formal mentoring," we refer to a mentoring relationship that is encouraged in some way by your unit. That encouragement might take the form of explicitly asking you to serve as the mentor for a new faculty member, or providing resources to make your experience of mentoring more productive. When we refer to mentoring, we mean the practice by which a more senior faculty member helps a junior faculty member get acclimated to the unit and the larger culture of the university and the discipline.

Demographics

- What is your age?
 - Under 30
 - 30-35
 - 36-40
 - 41-45

- 46-50
- 51-55
- 56 or over
- Gender?
 - Male
 - Female
 - Other
- Race / Ethnicity?
 - Asian / Pacific Islander
 - Black / African American
 - Hispanic
 - Unknown
 - White
 - Two or more
- What is your title?
 - Assistant Professor
 - Associate Professor
 - Professor
 - Other
- What is your unit?

Current Mentoring Activities

- Are you currently engaged in mentoring a faculty member in your unit, or is someone mentoring you?
 - Mentoring another faculty member
 - Being mentored by another faculty member
 - Both
 - Please choose the role which is primary.
 - ◆ Mentor
 - ◆ Mentee

Questions for Mentors	Questions for Mentees
<ul style="list-style-type: none"> ○ How long have you served as a faculty mentor? <ul style="list-style-type: none"> • Less than 2 years • 3-5 years • More than 5 years 	<ul style="list-style-type: none"> ○ For how long has this faculty member been mentoring you? <ul style="list-style-type: none"> • Less than 1 year • Between 1 and 2 years

Questions for Mentors	Questions for Mentees
	<ul style="list-style-type: none"> • More than 2 and less than 5 years • 5 years or more ○ Was this faculty mentor appointed to work with you by your department chair or some other administrator? <ul style="list-style-type: none"> • Yes <ul style="list-style-type: none"> • Did your department chair or administrator seek your input before appointing this faculty member as your mentor? • No <ul style="list-style-type: none"> • How did you connect with this mentor? ○ Have you had other formally appointed faculty mentors while at MAU? <ul style="list-style-type: none"> • Yes <ul style="list-style-type: none"> • What led to the change in mentors? • No
<ul style="list-style-type: none"> ○ Are you currently engaged in mentoring a faculty member in your unit? <ul style="list-style-type: none"> • Yes • No {faculty who choose no will be routed out of the survey} ○ For how many faculty do you serve as formal mentor? <ul style="list-style-type: none"> • 1 • 2-3 • Between 4 and 7 • More than 7 	<ul style="list-style-type: none"> ○ How many formally appointed faculty mentors do you have? <ul style="list-style-type: none"> • 1 • 2 • 3 • More than 3
<ul style="list-style-type: none"> ○ Are you engaged in mentoring faculty outside of your unit? <ul style="list-style-type: none"> • Yes <ul style="list-style-type: none"> • How many faculty do you mentor who are outside of your unit? 	<ul style="list-style-type: none"> ○ Do you have any faculty mentors from outside of your unit? <ul style="list-style-type: none"> • Yes

Questions for Mentors	Questions for Mentees
<ul style="list-style-type: none"> • Has an administrator asked you to serve as mentor to a faculty member outside of your unit? <ul style="list-style-type: none"> • Yes • No <ul style="list-style-type: none"> ◆ How did you come to meet the faculty that you mentor? • No ○ How would you describe the benefit to these mentees of your work with them? 	<ul style="list-style-type: none"> • What would you say the benefit is of working with these mentors? <ul style="list-style-type: none"> • No
<p><i>Please answer the following questions with regard to mentoring partners who are within your unit.</i></p>	
<ul style="list-style-type: none"> ○ How often do you meet with your mentees? <ul style="list-style-type: none"> • Once a week • Once a month • Once a semester • Less than once a semester ○ Where do you tend to meet? 	<ul style="list-style-type: none"> ○ How often do you meet with your mentors? <ul style="list-style-type: none"> • Once a week • Once a month • Once a semester • Less than once a semester ○ Where do you meet?
<ul style="list-style-type: none"> ○ Is there an agenda for the meeting? <ul style="list-style-type: none"> • Yes • How is it set? • I set it • My mentor / mentee sets it • No agenda 	
<ul style="list-style-type: none"> ○ What topics do you tend to discuss with your mentee(s)? Check all that apply. <ul style="list-style-type: none"> • Tenure • Research • Teaching • Service • Work-life balance • Departmental politics • University life • Other 	<ul style="list-style-type: none"> ○ What are the topics of your discussion with your mentor(s)? Check all that apply. <ul style="list-style-type: none"> • Tenure • Research • Teaching • Service • Work-life balance • Departmental politics • University life • Other

Questions for Mentors	Questions for Mentees
○ How would you describe your responsibilities as a faculty mentor?	○ Do you have responsibilities as faculty mentee? <ul style="list-style-type: none"> • Yes <ul style="list-style-type: none"> • What are they? • No
○ What are your expectations of your mentee(s)?	○ What are your expectations of your mentors?
○ Would you say that you have a philosophy of mentoring? What is it?	
○ What is the most difficult aspect of communicating with your mentee(s)?	○ What is the most difficult aspect of communicating with your mentor(s)?
○ What is the best or most seamless aspect of communicating with your mentee(s)?	○ What is the best or most seamless aspect of communicating with your mentor(s)?
○ What is the most important aspect of the work you do as a mentor?	○ What is the most important aspect of the work your mentor does with you?
○ Would you be willing to complete an online diary regarding your meetings with your mentee(s)?	○ Would you be willing to complete an online diary regarding your meetings with your mentor(s)?

Appendix C: About the Information Diary

This information was provided to faculty who logged in to the Information Diary.

- What? The Mentoring Info Diary is a simple tool to record what you talk about with your mentoring partners. The diary can be maintained with just a few clicks of the mouse, or you can enter more detail if you wish.
- Who? In order to gather as much data as possible, any tenured or tenure-track faculty member who is engaged in any mentoring activity (whether as mentor or mentee) is invited to participate.
- Why? Knowing more about what faculty mentoring participants talk about over time in their meetings can help us understand what makes mentoring effective, and thus help us to foster those practices. It may also be helpful for you as an easy way for you to keep track of what you've talked about, to reflect on your mentoring practices, or to plan for your next mentoring meeting.
- How? The Mentoring Info Diary is accessible to you from any device that can connect to the internet. There are two basic sections to the diary – the details of the meeting itself, such as date, duration, and mentoring partner – and the topics addressed during the meeting. For every topic you enter, you'll be asked to include a few details, as

well as to assign it an information class. [Click here for more information about the different classes.](#)

A Few Example Topic Entries

<i>General Topic</i>	Information Class	Details	Q/A/D
<i>Grants</i>	Detail / Fact	NIH Application Procedures	Answer
<i>Research</i>	Interpretation	Department policies on research funding	Answer
<i>Tenure</i>	Reassurance	Improvement in student evaluation scores	Answer
<i>Teaching</i>	Interpretation	Best way to use canvas tools in large class	Discussion

Frequently Asked Questions

What if my mentoring partner isn't participating in the study?

Please don't give me identifying information about your mentoring partner. You can just enter a nickname or a reminder phrase in the mentoring partner field, such as The Chemist. Also, I will anonymize all the data when I write about it.

What if I make a mistake as I'm making a diary entry?

You can edit, or even delete, your diary entries at any time if they don't say what you intended to say.

How many diary entries should I make?

I would be grateful if you would make as many diary entries as you have time for, even including a talk in the hall. Mentoring information exchanges go on all the time, and the diary entries you make will help to show that.

Should I write about mentoring with people who aren't my official mentees or mentors?

Please make a diary entry for every mentoring exchange. The fact that your department chair didn't appoint this mentor or mentee doesn't mean that you are not engaging in mentoring activities with him or her.

Should I write about mentoring my graduate students?

My dissertation research is focused on the mentoring of faculty, not graduate students. However, if it's useful to you to make diary entries about your students, please go ahead -- just mark them in some way (put an S in brackets after the nickname, or something like that), so that I can easily exclude them from my analysis.

Elements of The Diary Entry Form

Meeting Duration:

- Less than 15 minutes
- 16-30 minutes
- 31-45 minutes
- 46-60 minutes

- o Between one hour and 90 minutes
- o Between 90 minutes and two hours
- o More than two hours

General Topic: This dropdown list is dynamically populated by the topics that the user has already entered. If the user is making his or her first entry, the list includes teaching, research, and tenure, as default topics. Afterwards, if the user wants to add a topic that isn't on the list, he chooses 'Other' and then adds the appropriate topic. The next time a topic entry is created, the new topic will appear in the list.

Information Type:

- o Details / facts
- o Interpretation
- o Reassurances
- o Other

Next to 'General Topic' and 'Information Class', there are help-text popups available if the user clicks the question mark by the label.

For General Topic, the help text is:

The General Topic is a broad category for classifying your information exchanges. Some examples are teaching, research, grants, or tenure. Add these as necessary, by choosing 'Add a new topic category' from this dropdown list. The idea is that you would only have around a dozen of these topics.

For Information Class, the help text is:

Detail / fact: topic about which there is little question, or no room for argument. An example is the procedure for filling out a requisition for travel funds

Interpretation: topic where the mentor's previous experience of similar situations or questions adds depth and richness to the information exchange. An example is an understanding -- somewhat akin to insider knowledge -- of what kind of grant is likely to be funded by a particular agency, based on knowledge of previous grant applications and their success or failure

Reassurance topic where the mentee feels uncertain and/or isolated, and the mentor responds with information intended to reassure the mentee in some way. An example is when the mentee expresses doubt over his ability to get all his papers graded on time, and the mentor says 'you'll get it done, don't worry.'

Other: Since I am asking you to classify your own info exchanges, using this category will signal to me that a new category is needed.

Appendix D: Codebook Used for Analysis of Qualitative Data

Code	#	Definition Notes	Sample Quotes
Advice	77	Giving or getting advice. <i>Not necessarily a direct response to an action by mentor or mentee.</i>	You should give them whatever advice you can provide to make them better professionally and happy as people. (SR 122)
Advocacy	24	Mentor acting in favor of mentee, recommending for appointments (e.g., committees) and making sure other faculty are aware of mentee. <i>An aspect of social context, suggesting faculty don't know or don't appreciate mentee.</i>	try to see that she gets what she deserves. (SR 302) Share experiences; listen to concerns; possibly intervene in sticky situation (SR 149)
Availability	56	Reference to being available for the mentoring partner, or not being available.	Mentor is very busy, and difficult to pin down for a meeting. (SR 338) To be supportive, respond and be available; to nudge when I think it is helpful and necessary. (SR 100)
Balance	23	Reference to work-life balance	she cares about work-life balance (SR 75) Advice on professional development and work-life balance. (SR 158)
Boundaries	6	Reference to mentoring partners as too close together or too far apart	She is incredibly (crazy, insanely) busy, and we talk a lot about the small program the two of us run and administrative and educational aspects. That means there is less time to discuss research and my progress. We also interact so often that everything bleeds together. (SR 237)
Clarity	6	Speech or thought that gets to the point and is easy to understand. <i>Is clarity another way to say honesty? When someone says speak frankly, don't they mean be honest?</i>	Giving clear signals about what defines "sufficient." (SR 269) To be clear on what which aspects of University bureaucracy must be followed. (SR 219)
Collaboration	12	Description of mentoring as collaboration between mentoring partners	Mentoring should be a collaborative process that includes support, guidance, feedback, and encouragement ideally in a manner that is the best fit for the mentee. (SR 289)

Code	#	Definition Notes	Sample Quotes
Commitment	19	Reference to commitment or effort	They follow up on advice and suggestions provided and come prepared for meetings. (SR 130) I like to be helpful, but also make each of the mentees realize that it is up to them to follow their own compass as they grow in their careers.. (SR 157)
Communication	48	Reference to communication channel or the expectation of communication	Face to face conversations (SR 130) Open communication regarding issues of concern. (SR 240)
Culture	22	Reference to insider knowledge (e.g., how things work)	I want to pass on the unwritten, strategic lessons I learned from that professor to give untenured faculty members the tools and orientation to be successful. (SR 117)
Detail / Fact	6	Reference to mentee's need for details or the mentor's discussion of them.	Setting priorities and organizing dossier prep timelines (SR 267) Asking for standards/procedures in the school (when I was a new prof). (SR 120)
Equality	5	Statement that mentor and mentee are peers, completely equal.	They're my peers, i.e. they process and act on information similar to myself. (SR 79)
Expectations	48	What administrators, the unit, the mentor, believe the mentee should be able to produce. <i>May be explicit or tacit. May be departmental, institutional, or disciplinary.</i>	Advice on how to meet expectations of the department reviews (3rd year and tenure). (SR 338) Help me figure out tenure process and expectations (SR 275)
Experience	38	A quality of the mentor's	Mentoring is sharing knowledge gained from greater experience. Helping mentor articulate goals and crafting s personal oathway to those goals. Partially its objective but mostly it's nurturing (SR 171)
Feedback	46	Reaction (e.g., comments, criticism) to mentee work. <i>Feedback happens when mentee has some work product and asks someone to review it.</i>	gives me feedback on my work and program. (SR 125) do not hold back, give feedback be it good news or bad news (SR 163)
Frequency	15	Number of mentoring meetings	we chat frequently regardless of any mentoring relationship. So the mentoring happens at unscheduled times, in an organic way. (SR 89) be very hands-on in terms of maintaining regular contact, checking in, and setting meetings (SR 159)

Code	#	Definition Notes	Sample Quotes
Gender	6	Reference to gender	to provide advice on aspects I see where they are perhaps a little deficient; particularly to help them network with other researchers; in some cases to protect them (my women mentees) who often get saddled with more teaching or other things; to help them get resources (SR 113)
Guide / guidance	55	A kind of information, offered by mentor or sought by mentee. <i>Similar to advice, but guidance is 'how to' while advice is 'should'.</i>	Guiding new faculty members, clarifying expectations, relating my experiences, providing support as necessary. (SR 189) guide faculty member to function as an effective, efficient Educator (SR 58)
Helpful	12	Giving or ready to give help. <i>A personality trait and an action.</i>	Trying to figure out what would help them most for some issues (SR 42) To help the junior professor understand the relative importance of various pulls on his/her time, to help provide connections to useful people or resources, to talk through difficult situations, and to be helpful in whatever way I can. (SR 115)
Honesty	85	A personality trait, somewhat synonymous with 'open'.	A good mentor is one that is honest and who has the best interests of the mentee in mind when giving advice (and not his/her own agenda/motives) (SR 188) I see my primary role as providing unconditional support to him/her along with honest feedback. (SR 221)
Informal	15	Personality trait or characteristic of the relationship.	My relationship with this mentor is extremely informal. I have no expectations of him, but I get a lot from him about the way the University works. (SR 264)
Information Sharing	18	Explicit reference to information sharing when there is no other obvious code choice.	To call my mentoring committee together. To have current CV and other supporting information so he can assess my progress. (SR 109)
Interpretation	26	Any kind of information which might involve interpretation (e.g., inside knowledge or judgment based on experience)	make sure the mentee has a friendly, knowledgeable source for questions about the promotion and permanent status and how to be successful (SR 88)
Knowledge	37	Deep and rich experience of the culture to which the mentee is being introduced.	He provides a sense of my place in the department (and, more importantly) the greater scientific community. A lot of this is done quite indirectly, when I am told stories about his own career. (SR 264)

Code	#	Definition Notes	Sample Quotes
Listen	59	Giving one's attention to what is being said.	That they be smart, listen, participate, and position themselves for success. (SR 79) Be yourself and listen to the other person (SR 24)
Navigation	29	Explicit reference to navigation, as well as metaphorical reference to faculty life as something to be explored or discovered.	Help navigate promotion and tenure process and expectations (SR 40) Talking about navigating faculty life in a general way, identifying conflicts and tradeoffs and resolving them. (SR 115)
Negative	12	Negative attitude toward any aspect of mentoring	Provide info to help me get tenure? Be a friend? My mentor does these things, but the relationship is soured by the feeling that I am being punished because I haven't published enough. (SR 48)
Network	14	Reference to building a network, meeting helpful people, etc.	Support of dealing with location specific situations, involving me in processes important for me and the department and university, fostering connections to other faculty and university members, and important entities outside the university, discussion partner who understands and supports my interests/plans (SR 242)
Not listening	7	Not giving attention to what is being said.	I've had/have faculty that just don't want to hear what you are telling them. (SR 163)
Open-minded	23	Willing to consider different perspective, concepts.	That she give some consideration to my recommendations. (SR 84) that s/he will give serious credence to my advice, though I realize that s/he also receives advice from others that contradicts mine (SR 327)
Personality	43	A direct reference to a personality trait.	He is very dry and jaded with the process. (SR 28) He is not on campus very often, but when around he is approachable and not intimidating. (SR 109)
Perspective	34	The mentor's experience provides a different point of view for the mentee	Provide insights from "the other side" (i.e., the tenured/senior side). Tell me what has worked or not worked for them. Help provide perspective on things -- is this or that a catastrophe or just a minor hiccup? (SR 89)
Politics	32	Reference to politics at department, college, university level	Guide the mentee through departmental politics. (SR 274)

Code	#	Definition Notes	Sample Quotes
Proactive	16	A personality trait. Someone who acts without necessarily waiting for advice or instruction.	The mentor needs to be proactive, as the mentee may not realize what advise they need to ask for. (SR 266) Developing short- and long-term career plans and reporting on progress; keeping my mentor updated on activities both within and outside the department/school (SR 131)
Procedures	6	Reference to procedures of any kind	When someone just wants to know facts of some sort - procedures, who to talk to, APT policies. (SR 42)
Proximity	14	Direct reference to physical proximity.	Working out of a different office/location. (SR 133) Office is physically close so it's easy to pop in for a quick question or two. (SR 93)
Publication	26	Reference to any aspect of publication	Encouraging publications in high quality journals. (SR 226)
Reactive	24	A personality trait. Someone who acts in response to someone else's action.	The mentee needs to take the initiative to take advantage of the mentoring relationship, share expectations about it, help me address the concerns raised, be responsive when I reach out. (SR 152)
Reassurance	4	Reference to a desire for reassurance or an offer of reassurance	Telling them that they are on track! (SR 27) Being candid and optimistic about the process myself. (SR 94)
Relationship	75	A direct reference to the mentoring relationship.	We do have interesting conversations and I enjoy speaking with him (SR 188) We were friends for the first two years I worked here, because I asked her to become my mentor, so we get along easily and know each others' favored communication styles. (SR 320)
Research	62	Reference to any aspect of research, including grants, grant writing, and funding.	To give advice on research and publication strategies. To always be available to answer questions. To discuss alternatives and trade-offs and help my mentee set priorities and manage his/her time well. (SR 121)
Safe	13	Describes what the mentee needs in order to communicate openly.	I trust her and feel like I can say anything. (SR 140) Creating a safe place for junior colleagues to release their worst fears and emotions (SR 19)

Code	#	Definition Notes	Sample Quotes
Self-sufficiency	4	A personality trait of the mentee, when the mentee is able to take care of necessary tasks without assistance.	To remove obstacles to success, to provide support as needed, and ultimately to help faculty become self-sufficient and to be able to do the same for the next generation of faculty coming in. (SR 166)
Service	18	Direct reference to service	To share with me any concerns or issues that he/she might have about teaching, research, and service. (SR 221)
Support	100	Describes what the mentor provides to the mentee, whether it is affective or concrete	Being available to discuss any concern I may have in a caring and nonjudgmental way. (SR 75) Emotional support, especially for women, given the gendered aspects of the profession. (SR 152)
Teaching	33	Direct reference to teaching	That they meet the highest standards of our institution and profession, in terms of research, service, and teaching. (SR 166)
Tenure (and promotion)	121	Reference to any aspect of tenure / promotion process	just a sense of responsibility and a good sense of the complex hierarchies of the tenure track system (SR 232)
Topic	11	When the response references only the topic covered.	Hearing progress made on various topics discussed in the past. (SR 304)
Trust	15	Either the mentor or the mentee. Either the mentee trusts the mentor or vice versa.	Due to a challenging situation, I do not feel fully safe or trusting of my mentor. (SR 289) I trust him, and so trust his advice. (SR 183)
URM	3	Reference to faculty in URM groups	And it's important to me that my mentoring help faculty of color succeed in an institution that doesn't have a good track record of hiring and retaining minorities. (SR 161)

Appendix E: Comparison of “Other” Topic Categories entered by Survey Participants

Survey participants were asked about the topics they discussed with their mentoring partner, and provided with several checkboxes from which they could choose. If the respondent chose “Other”, he or she was provided with a text box in which to add the “other” topic. Several faculty mentors added an “other” topic category, but analysis demonstrated that most of these “other” topics were really more specific examples of topics that already existed. The topics were thus collapsed into various larger groups, as shown in the table below.

Original Topic Entry	Combined Topic Entry
Advising students	Teaching
Annual/Mid-Year Review	Tenure
Application for permanent status	Tenure
Campus politics	Campus politics
Check-in (general)	General
Conference mentorship	Conference mentorship
Faculty life/end of semester	Work Environment
General	General
Introductions (general questions in all areas)	General
Manager relations	Work Environment
Not Entered	Not Entered
Personal--Work/Life Balance	Work-Life Balance
Position duties	Professional Development
professional development	Professional Development
Research	Research
Teaching	Teaching
Tenure	Tenure
Upcoming meetings	Work Environment
Working with difficult colleagues	Work Environment

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