

AN ABSTRACT OF THE DISSERTATION OF

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Title: But what's in it for them? Understanding the effects of participation in the Research Mentor Program from the mentors' perspective.

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The purpose of this study was to identify and describe the experiences of the research mentors who participated in the UNHM Research Mentor Program. The research question that guided this study was: What effect did participation in the Research Mentor Program have on the research mentors who participated. The researcher sought to understand this experience from the mentors' perspective to determine if the reciprocal learning environment created through peer dyads impacted knowledge and skills. The participant sample (six women and two men) was drawn from among the students who completed the Tutor Development course between fall 2004 and spring

2013 and served at least one semester as a research mentor. The literature review explored the extent of collaborative efforts between academic libraries and college writing centers, surveyed the role of students in academic library reference and instruction services, and examined the application of Vygotsky's sociocultural learning strategies in higher education classrooms and academic libraries. The qualitative data collection methods utilized included semistructured interviews, a survey adapted from the *Survey Regarding Satisfaction, learning and Development of Peer Mentors in Higher Education* (Posa, 2011), and document reviews of interview transcripts and Tutor Development course syllabi. Three effects of program participation were identified: 1) participants expressed uncertainty and self-doubt in their abilities to succeed initially as a research mentor; 2) participants acknowledged a perceived increase in learning and personal development; and 3) participants attributed increased learning and personal development to the reciprocal learning environment engendered in the peer-to-peer dyads. This study appeared to confirm that reciprocal learning environments were created through the peer-to-peer dyads established between the research mentors and tutees and through the Tutor Development course cohort relationships. Several recommendations for future studies were offered that could expand upon and enhance these conclusions to answer the question, "*But what's in it for them?*" by affirming the value and benefit intrinsic to the role of the research mentor.

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But what's in it for them? Understanding the effects of participation
in the Research Mentor Program from the mentors' perspective

By

Ann Elizabeth Donahue

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Chapter One

Peer tutoring is an extensively researched example of undergraduate peer-to-peer dyads found in higher education today. Wood and Wood (1996) offered a description of the peer tutor's role as serving "to provide a bridge between a learner's existing knowledge and skills and the demands of the new task" (p. 6). Peer tutoring is primarily focused in the academic realm, often as small group or team activities within the classroom or as a formalized service offered by the learning assistance center. Many research studies (Magolda & Rogers, 1987; Saunders, 1992; Topping, 1996) examined the effectiveness of peer tutoring relationships from the tutees' perspectives and found that most tutees experienced increased knowledge and skills due to these dyads. While other researchers (Annis, 1983; Bargh & Schul, 1980; Pobywajlo, 2004; Villareal, 2005) acknowledged the benefits that peer tutoring relationships offered to the tutees, these studies also sought to identify benefits experienced by the tutors. Griffin and Griffin (1997) found that the cooperative learning approach inherent in the peer tutoring relationship increased students' academic achievement both for the tutee and the tutor.

The University of New Hampshire Manchester (UNHM) Research Mentor Program incorporates the strengths of peer tutoring and cooperative learning models to support students in the research process. In this collaborative initiative between the college's library and writing center, peer writing tutors complete a credit-bearing tutor development course team-taught by the instruction librarian and the director of the writing center. Upon completion of the course, these writing tutors are designated as

research mentors and provide support to first-year students navigating the research process from idea generation through library research to writing the final draft.

Previous to the creation of the Research Mentor Program, the UNHM librarians, writing center director and composition faculty enjoyed a long partnership for cooperatively supporting first-year students' research activities. By employing several best-practice techniques grounded in the field of developmental education research (Boylan, 2002), the UNHM team (the librarians, writing center director, and composition faculty) adopted the motto of the National Association of Developmental Education (NADE) as its guiding philosophy to assist "underprepared students prepare, prepared students advance, and advanced students excel" (p. 3). The UNHM team members collectively and individually contributed to the ongoing scholarly dialogue by presenting their research in local, regional, and national venues. This culture of collaboration coupled with extensive engagement in the prevailing research for developmental education provided a strong foundation from which to create the Research Mentor Program at UNHM. In crafting this program, the librarians and writing center director shared two underlying assumptions about learning that framed the criteria, expectations, and outcomes for the program. These assumptions were: 1) that employing peer-to-peer learning and scaffolding instruction across the semester in small segments, instead of in a single information-rich instruction session, supported deep learning; and 2) that establishing peer tutoring relationships created a reciprocal learning environment whereby students learn from each other.

This concept of reciprocity as applied to learning, teaching, and tutoring in the professional literature (Annis, 1983; Fantuzzo, Dimeff & Fox, 1989; Fantuzzo, King

& Heller, 1992; Foster & Rotoloni, 2005; Griffin & Griffin, 1997; Riggio, Fantuzzo, Connelly & Dimeff, 1991) refers to an exchange between peers in which the potential for both individuals to advance exists. Based on the fundamental role of dialogue in cognitive development (Vygotsky, 1978), reciprocal learning environments employ cooperative learning, scaffolding techniques, and think-aloud strategies to reinforce understanding and advance metacognition.

The Research Mentor Program aligns with Vygotsky's (1978) sociocultural theory of a student-centered collaborative approach to learning. The dyads developed between first-year students and research mentors form the medium whereby a strategy for development and learning that Vygotsky called the zone of proximal development can be realized. He defined the zone as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Research mentors function as the more capable peer in these dyads by modeling good research behavior and guiding students through the research process.

Purpose of the study

Research studies conducted on college students demonstrate that the tutoring dyad results in academic achievement gains for both the tutee and the tutor (Annis, 1983; Bargh & Schul, 1980; Benware & Deci, 1986; Fantuzzo, Dimeff & Fox, 1989; Magolda & Rogers, 1987). During my undergraduate years I had the good fortune to work as a peer writing tutor. Looking back to that experience, I realized that I not only gained increased confidence and satisfaction from helping my peers but I

strengthened my own writing skills and sharpened my content knowledge. I learned more deeply because I was teaching through the role-modeling and consultative discussions taking place within each tutoring session. Although I did not anticipate increased learning as an outcome of my tutor role at the time, I believe the dyadic relationship created a reciprocal learning environment whereby my own knowledge was expanded. This belief influenced my contributions to the development of the program goals established for the Research Mentor Program and led me to wonder what participation in the program would mean to the research mentors.

My role in the development of the Research Mentor Program began with the introduction of an idea to help first-year students make deliberate connections between research and writing with the assistance of trained peers. I participated in the program development and provided back-up support for teaching the curriculum during sabbatical and medical leaves. In the early years of the program, I worked directly with the research mentors in the information literacy instruction sessions. In January 2011, we began a formal evaluation of the Research Mentor Program. The first phase of the evaluation focused on assessing first-year students' learning outcomes. Although the entire UNHM team collaborated on development of the assessment instruments, I took the lead role implementing the study and analyzing the results. The findings of this eighteen-month study revealed a positive progression in student learning outcomes (Donahue, 2012). First-year students demonstrated improved research skills over the course of each semester examined.

In the summer of 2011, I presented the preliminary results of this eighteen-month study at the 9th Northumbria International Conference on Performance

Measurement in Libraries and Information Services (Donahue, 2011). As the final slide of my PowerPoint presentation appeared, I turned to the audience and offered to answer any questions regarding my presentation. Several individuals asked for specifics about the costs associated with the program, the training plan for the mentors, and the role of the mentor in the classroom. Then a voice from the back of the room asked, "I understand why this approach works for the first-year students in the classroom but . . . what's in it for the mentors? Why would they want to participate?"

In responding to this question I articulated the program goals established for the mentors. These included expanding tutor roles and enhancing their own research skills; improving their information literacy skills; providing professional development opportunities for Master Tutor certification through the College Reading & Learning Association (CRLA); and promoting librarianship as a career possibility. The answer seemed to satisfy these professional librarians, but over the course of the next few months the question continued to haunt me. I wondered if the designated goals were being met and if the research mentors associated any benefit to participating in the program. Over time as I pondered these questions, they drew me to the focus of my dissertation study.

As an instructor and researcher, I wanted to understand the experiences of the mentors who participated in the Research Mentor Program to determine if the reciprocal learning environment created through the peer dyads impacted their knowledge and skills. In order to really know *what's in it for them*, I conducted a qualitative study designed to explore those experiences from the research mentors'

perspective. The purpose of this research study was to identify and describe the experiences of the research mentors who participated in the UNHM Research Mentor Program. The research question that guided this study was: What effect did participation in the Research Mentor Program have on the research mentors who participated?

Rationale

The significance of this study has multiple trajectories. From a theoretical standpoint, this study generated data to enable this researcher to determine, through an evidence-based analysis, that these dyadic relationships engendered reciprocal learning environments enabling research mentors to advance their own knowledge while guiding students through the research process. From a practical standpoint, this study generated information that is useful to an ongoing program evaluation of the Research Mentor Program. Results of this study contribute to the fledgling body of literature among academic library professionals who are examining the intersections between Vygotskian learning theory and information literacy instruction (Bhavnagri & Bielat, 2005; Wang, 2007). Vygotskian theories, specifically scaffolding, collaborative learning, and the zone of proximal development, have been explored in peer tutoring literature for several decades (Brown & Campione, 1990; Deci & Ryan, 1985; Fantuzzo, King & Heller, 1992; Nelson, 1995/96; Palinscar, 1986; Rogoff & Wetsch, 1984; Thorkildsen, 1993; Wood, Bruner & Ross, 1976; Wood & Wood, 1996). The results of this study move the conversation beyond the writing center by focusing on the positive benefits possible when peer tutors and librarians collaborate to provide a holistic approach to supporting the research process.

Description of the Research Mentor Program

For the past decade, UNHM Library's information literacy program evolved from a traditional one-shot bibliographic instruction session approach, where students were passive recipients of library resource demonstrations, to curricula-aligned information literacy instruction, where students engage in critical thinking while employing library resources in the classroom. This evolution parallels trends discussed in the professional literature with respect to instruction practices within secondary school libraries and academic libraries across the United States and Europe (Behrens, 1994; Hara, 2006; Mounce, 2010; Rader, 2002; Virkus, 2003). The UNHM Research Mentor Program allows the librarians to further enhance information literacy instruction by employing a peer-to-peer approach across the entire research cycle, from idea generation to final draft.

The idea for the Research Mentor Program originated from a poster presentation discussion shared at the Association of College and Research Libraries (ACRL) annual conference in 2003. In a poster presentation, a large residential university described a peer-to-peer program developed by the library to train student assistants in basic library research skills in order to conduct "drop-in" help sessions in the residence halls during evening and week-end hours. UNHM is a commuter college with no residence halls so an exact duplication of the program was not viable. The idea of providing research assistance at the point-of-need resonated with the UNHM librarians and encouraged an exploration of potential adaptations that could fit the needs of a commuter environment.

The college already had an effective, nationally-recognized peer tutoring program that provided math and writing assistance across a broad spectrum of disciplines. A programmatic effort to link peer writing tutors with each First-year Writing course offered a possible vehicle for adapting and expanding library research assistance to these first-year students. A collaboration between the library and the Center for Academic Enrichment (CAE) was crafted that incorporated basic library research skills instruction within the tutor training curriculum and included these trained peers in library instruction sessions for the First-year Writing courses.

During academic year 2004, a pilot program was launched and recruitment for research mentors was limited to experienced peer tutors who completed CAE tutor training workshops (Fensom, McCarthy, Rundquist, Sherman & White, 2006). This limitation allowed the pilot program to focus on library research skill development in future tutor training sessions. Three peer tutors were selected to participate in the pilot program. Over the course of the fall semester, the librarians worked individually with each tutor to provide ten hours of training in research skills and basic reference techniques. White and Pobywajlo (2005) described the implementation and evaluation of the program in the pilot year as "a learning experience" that "led us to a more reflective practice" in which "we identified several key areas where we can together begin to make positive changes in the project" (p. 192). At the close of the pilot program, the UNHM team assessed stakeholders and identified a small number of changes to improve the program outcomes.

One of the changes made as a result of that pilot year was to expand the Research Mentor Program to include all writing tutors not just those linked to a First-

year Writing course. This approach reinforced shared belief that research and writing are intertwined and are best supported holistically. A credit-bearing course was developed and implemented in fall semester 2004 to train peer tutors to take on the role of research mentor. The course was team-taught by the CAE Director and an instruction librarian. The course curriculum blended theoretical and applied concepts of adult learning theory, writing theory, and research methodology through readings, discussions, demonstration, and role-play. The course culminated in a capstone experience that requires students to employ a broad range of research and writing skills honed throughout the semester (Gamtso, Blair Vogt, Chartier, Fensom, Glisson, Jefferson & Sherman, 2013). In mock tutorial workshops, peer tutors guided a first-year student, played by one of the reference librarians, through the research process thereby "experiencing firsthand the connections between good research and good writing, between a clear argument and cogent organization, between grammatical structure and clarity of meaning" (Blair Vogt, Donahue, Gamtso & Jefferson, 2013, p. 14). These experiences allowed research mentors a safe, supportive environment in which to practice potential interactions they may encounter in future tutorial sessions.

The peer tutors who participated in the Research Mentor Program were accomplished students. They were recommended to the program by their professors because they demonstrated strong writing and research skills. The tutor development course was designed to give these tutors a foundational understanding of learning styles, interpersonal communication skills, tutoring pedagogy, and library research techniques. Armed with this knowledge and supported by the instruction librarians,

these tutors took on the role of research mentors modeling research best practices in the information literacy instruction classroom and in one-on-one tutorial sessions.

Operational definitions of key terms

Below are operational definitions of key terms and concepts employed in this dissertation:

- *Scaffolding*: an instructional strategy designed to provide temporary support to students while learning new concepts or ideas, modeling tasks and providing guides are examples of scaffolding activities.
- *Research Mentor Program*: program developed by the UNHM Library and the Center for Academic Enrichment (CAE) using peer writing tutors trained in writing theory and library research techniques to provide basic support assistance to first-year students engaged in writing research papers.
- *Research mentor*: a peer writing tutor who completed a credit-bearing tutor development course incorporating information literacy training in order to prepare them to provide library research and writing support to fellow students.
- *Reciprocal learning*: a learning strategy where students teach one another about ideas and concepts creating an environment where both students can advance learning.
- *Personal Development*: for the purpose of this study the following categories represent skills associated with personal development; collaboration, communication, decision-making and problem-solving, reflection and self-awareness, and self-confidence.

- *One-shot bibliographic instruction*: defined in the *Dictionary for Library and Information Science* as a “slang term used by instruction librarians to refer to formal library instruction given in a single session, as opposed to instruction extended over two or more sessions” (Reitz, 2004-2014).
- *Information Literacy*: defined by ACRL as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (Information Literacy, 2002, p. 2).
- *Boolean Logic*: a process of linking concepts in order to narrow or broaden a search.

Summary

This chapter included an introduction to the study and the rationale for conducting this study. The research question was identified along with the potential significance this study offers to academic librarians and writing center professionals. This chapter concluded with a brief background explanation about the Research Mentor Program and the operational definitions of key terms and concepts central to this study. Chapter Two provides a review of the professional literature related to collaborations between academic libraries and college writing centers, the role of students in academic library reference and instruction services, and the intersections between Vygotsky’s sociocultural learning theories, adult learning, and information literacy.

Chapter Two

Review of Related Literature

Purpose of the study

The purpose of this research study was to identify and describe the experiences of the research mentors who participated in the University of New Hampshire Manchester (UNHM) Library's Research Mentor Program. The research question that guided this study was: What effect did participation in the Research Mentor Program have on the research mentors who participated?

This chapter provides an overview of the professional literature related to a variety of collaborative efforts undertaken between academic libraries and college writing centers, the extent of the role of students in academic library reference and instruction services, and the application of Vygotsky's sociocultural learning strategies in higher education classrooms and libraries. Each of these areas informs the development and ongoing evaluation of the Research Mentor Program which is a partnership between the library and the Center for Academic Enrichment (CAE) utilizing student peers in an instructional role framed in sociocultural learning theory to support writing and research across the curriculum.

Nationally, university efforts to integrate information literacy across the curriculum created opportunities for academic librarians to explore different approaches for delivering instruction. New collaborations emerged which linked libraries with a variety of academic departments in an effort to create a seamless integration. Initially, academic librarians forged partnerships with teaching faculty to

develop assignment-specific learning experiences to relate information literacy skills to the course work.

Cannon and Jarson (2009) noted that when information literacy concepts and principles are not intentionally included in the course curriculum by the teaching faculty students are less receptive to information literacy instruction. These authors suggested that librarians “collaborate with teaching faculty, whether at the level of course design or in creating specific activities” (pp. 5-6) in order to effectively integrate information literacy instruction within the curriculum.

In addition to partnering with teaching faculty, academic librarians have collaborated in a variety of ways with their institutions’ writing centers. The UNHM Research Mentor Program is one of these collaborations. Through this program undergraduate students participated in a peer-to-peer model designed to integrate information literacy instruction within the First-Year Writing course curriculum and to support the entire research process from idea generation to final draft.

Collaborations between Academic Libraries and College Writing Centers

The professional literature describes a variety of examples of collaborations that exist between the academic library and the college writing center. Some examples defined shared-space arrangements that led to mutually beneficial opportunities to enhance student services (Currie & Eodice, 2005; Foutch, 2010; Giglio & Strickland, 2005). Other examples described joint workshops led by instruction librarians and the professional writing staff that focused on improving student learning outcomes (Artz, 2005; Boff & Toth, 2005; Cooke & Bledsoe, 2008; Leadley & Rosenberg, 2005). Further examples discussed the use of peer tutors to

deliver an assortment of library services ranging from word-of-mouth marketing ambassadors to basic research support assistance (Cannon & Jarson, 2009; Deese-Roberts & Keating, 2000a; Furlong & Crawford, 1999; Gruber, Knefel & Waelchli, 2008; Lowe & Lea, 2004; Millet & Chamberlain, 2007).

Shared-space arrangements.

When writing centers are located within the library, this close proximity creates opportunities for exploring possible partnerships. According to Currie and Eodice (2005) convenient access to both writing and research support led to the development of a “collaborative learning environment within the main undergraduate library, [which] strengthened the academic image of the writing center while contributing to a student-driven service atmosphere at the libraries” (p. 42). This partnership at Kansas University was a consequence of a shared space arrangement which resulted in an effective referral system to support students’ writing and research projects.

Foutch (2010) described a space-sharing arrangement which led to a Vanderbilt University librarian scheduling weekly drop-in hours in the Writing Studio. This collaboration began after conversations between librarians and the Writing Studio professional staff uncovered similar concerns about students’ difficulties completing course-specific research papers. Students’ deficiencies existed in both employing information literacy concepts and writing skills. Foutch suggested that because the library and Writing Studio staff shared the viewpoint that research and writing are intertwined, the possibility for creating a single service point to assist students was realized.

A five-year space-sharing arrangement at Wesley College was portrayed by Giglio and Strickland (2005) as an environment where “peaceful coexistence rather than cooperation was the governing philosophy” (p. 138). The appointment of a new writing center director sparked an exploration of avenues for shared activities with the librarians. Discovery of a shared goal to improve student learning and a willingness to collaborate, enabled the library and the writing center staff to link information literacy efforts.

Artz (2005) credited a space-sharing arrangement as the catalyst that led to an effective long-term partnership between the library and the writing center at St. Joseph College. The geographical proximity of the writing center to the reference department created an environment whereby staff in both units identified “mutually compatible goals” (p. 99). This discovery led to the creation of joint workshops and tutorials co-taught by librarians and professional tutors to support students’ research and writing skill development.

Joint workshops.

Although Artz (2005) credited the space-sharing arrangement as the catalyst for the establishment of joint workshops at St. Joseph College, it was not necessary for the writing center to be co-located in the library for these endeavors to succeed. Research and Writing Project Clinics were established at Bowling Green State University as a joint venture between the library and the writing center. Boff and Toth (2005) noted these clinics demonstrated that “deliberate collaboration and sharing of knowledge and know-how between [the] respective units more effectively fosters student learning and better prepares students for negotiating the complex worlds of

information and communication through writing” (p. 148). These workshops were led by a writing consultant, a graduate student who taught in the composition program, and scheduled in the library to allow for convenient access to library reference assistance when necessary.

The joint workshop approach utilized at the University of Washington, Bothell (UWB) led to the development of a formalized, credit-bearing course. Leadley and Rosenberg (2005) explored the iterative process inherent in their collaboration at UWB. Although the library and the writing center already partnered to teach resource evaluation workshops, a campus-wide commitment to integrating information literacy into the curriculum encouraged a deeper partnership between the units. Librarians, faculty, and writing specialists worked together to develop an effective team-taught credit-bearing course “in which there is shared intellectual ownership of the design and implementation of assignments and workshops that address writing and research” (p. 73) effectively across the curriculum.

Peer tutors and library services.

When library collaborations with writing centers utilize student peer tutors rather than professional staff a new dimension to extend the reach of the librarians is possible. Peer tutors fulfill specific service needs, whether as marketing ambassadors (Furlong & Crawford, 1999; Millet & Chamberlain, 2007) or research assistants (Cannon & Jarson, 2009; Deese-Roberts & Keating, 2000a; Gruber, Knepfel & Waelchli, 2008; Lowe & Lea, 2004). When these collaborations involve an aspect of research or instruction assistance, various levels of training must be incorporated to prepare these student peer tutors to develop the basic skills necessary for engaging

with research strategies and processes. This training provides the peer tutors with critical foundational skills that enable them to directly respond to research questions that might arise during writing tutorials.

Trinity University incorporated peer tutors in their marketing and outreach efforts by using these students to spread the word about library services directed toward first-year students. At the beginning of each academic year, librarians attended peer tutoring training sessions to inform the peer tutors of the library services offered for first-year students. The librarians asked peer tutors to share this information with their tutees during tutorial sessions. Millet and Chamberlain (2007) determined that peer tutors at Trinity University were “consistently some of the most conscientious and brightest students on campus, and their opinions matter more to new first-year students than those of librarians or other authority figures” (p. 95), therefore, they deemed using peer tutors as outreach ambassadors to first-year students a successful enterprise.

Muhlenberg College was an example of a library /writing center collaboration that began as a space-sharing enterprise but grew to incorporate student peer tutors as research mentors (Cannon & Jarson, 2009). Librarians provided two training sessions for peer tutors that focused first on discipline-specific language and citation styles, and then on evaluation of resources. The peer tutors employed basic research skills to assist tutees during a writing tutorial and were encouraged to refer students to librarians for complex research concerns. An evaluation of this approach proved so positive that the library administrators agreed to move the writing center closer to the

reference area creating a Writing and Information Consultation Center promoting collaborative work (Cannon & Jarson, 2009).

Gruber, Knefel, and Waelchli (2008) described a classroom clinic co-led by instruction librarians and student peer tutors rather than the professional tutor staff. This collaboration was crafted to respond to assignment-specific objectives that reflected information literacy standards and effective writing criteria. The alliance between librarian, faculty, and peer tutor enabled the students in the course to participate in small group experiences facilitated by either the librarian or peer tutor to grapple with identifying the key elements of scholarly inquiry and evaluating academic journal articles.

Deese-Roberts and Keating (2000a) discussed the collaboration that existed at the University of New Mexico (UNM) between the library and the writing center located within the main undergraduate library. This pilot program utilized peer writing tutors who were trained by librarians in “five key concept areas: (1) library services and policies; (2) search strategies; (3) Boolean logic, search logic, and limits; (4) vocabulary (controlled vs. natural); and (5) database structure” (p. 225). Peer writing tutors then worked with students on research and writing projects. Assessment of the pilot program indicated positive feedback from all stakeholders. The assessment focused on user satisfaction and participation. Student participation in the program “increased 100% from the first to the second semester” (p. 228) inspiring the authors to declare the pilot program a success.

Upon completion of the pilot program, Deese-Roberts and Keating (2000b) furthered their collaboration by implementing the Library Instruction Tutoring

Program (LITP) at UNM and published a monograph that served as a step-by-step guide for libraries interested in establishing a peer tutoring model for library instruction. In their guide, Deese-Roberts and Keating (2000b) began with a historical overview of library instruction and peer tutoring in higher education; subsequent chapters outlined the steps to recruiting, hiring, and implementing a peer tutoring model. This program was guided by ACRL information literacy standards and reflected the traditional writing center philosophy that the “tutor becomes a guide or mentor and models approaches to problem-solving that allow the tutee to discover the answer or to understand a method of finding the answer” (p. 36). This philosophy aligned with the UNHM Research Mentor Program efforts to use peer tutors as research mentors who model good research practice and guide first-year students through the research process.

Elmborg (2005) suggested that peer tutors work effectively because they “understand the student perspective . . . they live that perspective” (p. 15). Nelson (1995/96) proposed that peer tutors were well situated to assist less capable students navigate the zone of proximal development because these tutors recognized and were able to articulate the concerns that students experienced with the academic content. Peer tutors empathized and guided comprehension more effectively because they “speak the language of other undergraduates more distinctly than graduate students and professors” (p. 45). Lowe and Lea (2004) defined the peer tutor in an academic setting as “a person who helps you over bumps and makes you realize that you really can do it – whatever it is – by yourself” (p. 134).

University of New Hampshire Manchester's peer tutor program was already a nationally-certified, highly effective service that recognized the benefits of students helping students. By enhancing the writing tutor's toolkit with information literacy skills and integrating them into the instruction sessions to model good research behavior, these peer mentors were better equipped to guide first-year students through the entire research process.

The Role of Students in Academic Library Reference and Instruction Service

The role of students in academic libraries was examined by Gregory (1995). He traced the use of student library employment from as early as 1907 through the mid-1990s and uncovered a variety of responsibilities assigned to student workers. In the early days, these duties included clerical or custodial tasks, book preparation, and mending. Mid-century, filing and shelving materials, staffing circulation and reserve desks were the norm. More recently, students are participating in the delivery of reference and instructional services. The student employee's role in reference and instruction services is evolving from responding only to directional inquiries and online catalog queries, to introducing basic research techniques and supporting citation-related questions (Connell & Mileham, 2006; Faix, Bates, Hartman, Hughes, Schacher, Elliot & Woods, 2010; Henning, 2000; Holliday & Nordgren, 2005; MacAdam & Nichols, 1989; Neuhaus, 2001; Sheets, 1998). These students are trained to handle the daily rudimentary requests and to refer complex reference questions to a professional librarian.

The advent of the information commons approach to serving the research needs of the academic community presented an opportunity to expand the student

employee's role in delivering reference service. Bailey and Tierney (2008) define the academic information commons as "a model for information service delivery, offering students integrated access to electronic information resources, multimedia, print resources, and services" (p. 1). Stanfield and Palmer (2011) identified technical competency as a requisite for student employees delivering reference support in the information commons. The ready availability of computer clusters in the information commons attracts large numbers of users; however, these users bring a broad range of expertise and comfort in using the virtual library and the variety of software programs offered. Student employees must be "extensively trained in both software applications and electronic library resources" (de Jager, 2004, p.100) in order to provide assistance within a busy information commons environment.

Several academic libraries have incorporated undergraduate students in their instruction programs. The role of these students varied from facilitating small group discussions (Gruber et al, 2008) to roaming the classroom to provide assistance during hands-on activities (Deese-Roberts & Keating, 2000a) to teaching mini-seminars on specific library resources (Holliday & Nordgren, 2005). As the demand for library instruction in lower-division general education courses grew to unsustainable levels, librarians at California Polytechnic State University implemented a "student-based solution" (Bodemer, 2013, p. 578). Undergraduate students serving as reference assistants received additional training in instructional design, were designated as peer instructors, and worked alongside the librarian in the classroom. The online evaluations for each session showed that students ranked these peer instructors higher than the librarians on an affective scale (Bodemer, 2013). Based on these evaluations,

the student peer instructors were assigned to lead basic information literacy sessions independently.

Bodemer (2013) advocated for academic libraries to increase peer learning opportunities through the delivery of reference and instruction service. Bodemer referred to decades of research on peer learning, made connections to the peer learning theories espoused by Piaget and Vygotsky, described the cognitive and affective benefits of peer learning, and identified potential benefits to all stakeholders through this model.

Vygotsky's Sociocultural Learning Theory, Adult Learning, and Information Literacy

Scholars are exploring the intersections between Vygotsky's sociocultural learning theories and the adult learner in order to assess the impact of a Vygotskian framework on the teaching and learning experiences among college students and faculty. The findings associated with these explorations entered the professional discourse through paper presentations at various conferences (Kuhlthau, 1996; Wang, 2006), but also through a growing number of journal articles (Huong, 2007; Vare, 1993; Torres; 1996; Warford, 2010; Wass, Harland & Mercer, 2011; Williams, 2001). The scholarly dialogues focused on the effects of utilizing sociocultural learning theories and collaborative learning strategies to create a more effective learning environment for adult learners. Academic librarians applying these theories and strategies to information literacy instruction particularly emphasize the practice of scaffolding and peer-to-peer interactions (Bhavnagri & Bielat, 2005; Fourie, 2013;

Gruber, A.M., Knefel, M.A. & Waelchli, P., 2008; Kuhlthau, 1996; Wang, 2007, Wang, Bruce & Hughes, 2011).

The main tenets of Vygotsky's theories are centered in a sociocultural constructivist approach to knowledge and development. Wertsch (1985) suggested that to understand Vygotsky's theories it was helpful to identify themes on which to frame the ideas. He proposed that the following three themes were central to Vygotskian thought: "(1) a reliance on a genetic or developmental method; (2) the claim that higher mental processes in the individual have their origin in social processes; and (3) the claim that mental processes can be understood only if we understand the tools and signs that mediate them" (p. 14-15).

Vygotsky (1978) crafted a genetic law of cultural development in which he theorized that in order to understand an individual one must recognize and understand the social relationships in which that individual is engaged. Vygotsky held that an individual's cultural development first took place between individuals on a social plane and then continued within the individual on an internal plane. It was through this interaction between individuals within the societal and cultural norms that an individual's developmental experiences originate. The social context formed the basis for the individual's understanding of the rules of engagement and as this understanding was internalized the individual's higher mental processes were impacted. The tools and signs that mediate higher mental functions were critical to development and are embedded within the culture of the individual. Vygotsky identified language as the primary tool, but counting systems, maps, writing, and art were some additional key symbols that mediate cognitive development (Berk & Winsler, 1995). Vygotsky's

theories were originally formulated within a child development context, but the concept of socially constructing knowledge has application across the development cycle.

Among Vygotsky's theories of cognitive development is the idea of a zone of proximal development. The zone of proximal development is the gap that exists between actual performance and potential performance. Through this theory, Vygotsky reasoned that what a child could do today by herself represents her actual performance level and what that same child could do with assistance from an adult or more capable peer represents her potential performance. The gap between these two performance levels is where instruction can lead development and bring the child from actual ability to potential ability. Once the child internalizes the new performance level another zone of proximal development is created allowing for continued growth and development (Berk & Winsler, 1985; Daniels, Cole & Wertsch, 2007; Good & Good, 1999).

Zone of proximal development and graduate education.

One area in higher education where research centers on exploring the implications of the zone of proximal development for adult learners is in graduate teacher education programs (Blanton, Westbrook & Carter, 2005; Jones, Rua & Carter, 1998; Shabani, Khatib & Ebadi, 2010; Torres, 1996; Vare, 1993; Warford, 2011; Williams, 2001). Torres (1996) reported the findings of a study in which a collective zone of proximal development among in-service teachers was assessed. The project engaged in-service teachers in systematic inquiry within their own classrooms and required reflection on those experiences both internally and within a

peer collaborative cohort. In these cohorts, peer encouragement and support of one another combined with personal internal reflection were instrumental in advancing each cohort member through their individual zone of proximal development.

Science teachers participating in a graduate methods course engaged in a study to examine the impact of a constructivist pedagogical approach in teacher education (Jones, Rua & Carter, 1998). Employing the Vygotskian framework of a sociocultural construction of knowledge, the course structure was designed to partner a more experienced teacher with a less experienced teacher thereby creating the peer relationship necessary to advance through the zone of proximal development. Tools used to mediate learning and serve as evidence of outcomes included concept maps, journal entries, and portfolios. Findings indicated that through these dyadic collaborations both science content and pedagogical knowledge increased. The authors determined that learning was not centered solely on the less experienced teacher but that “the expert also learned from the novice” (p. 982). These findings demonstrated the effects of reciprocal learning as a social construct of knowledge in accordance with Vygotsky’s theory.

Williams (2001) examined the outcomes of a semester-long graduate course designed to train effective mentors for first-year teachers. Vygotsky’s zone of proximal development was just one of the multiple theories incorporated within this professional development experience. The prospective mentors were asked to reflect on their own first-year teaching experience and to discuss their experience using the various stages of the zone of proximal development to identify potential ways to mentor and support first-year teachers effectively. The learner progressed through

these stages: 1) performance with assistance of a more capable individual; 2) performance with self-assistance but without mastery; 3) internalization and mastery; and 4) de-automization when proficiency is lost and must be regained (Williams, 2001).

Warford (2010) proposed a Vygotskian approach to mitigate a disconnection that can arise between academic theory and practical fieldwork in teacher education. Mediated by situated learning, prospective teachers engaged in “a three-way conversation that places teachers’ prior experiences as learners and other tacit beliefs about pedagogy into conversation with pedagogical content of the teacher education program and observations of teaching and learning in field placements” (p.252-253). In this approach, learners begin with the self-assisted stage by reflecting on previous experience and current beliefs. Accessing prior knowledge early in the research process is a critical strategy encouraged in the UNHM Research Mentor Program.

Vygotskian theories in higher education are not restricted to teacher education programs; however this area has benefitted from significant inquiry and subsequent research. The following studies explored Vygotsky’s zone of proximal development through the lens of peer collaboration and scaffolding, two foundational elements in the UNHM Research Mentor Program.

Zone of proximal development and undergraduate education.

Wass, Harland, and Mercer (2011) examined the development of critical thinking skills for zoology undergraduates over a three year period. Data were collected through annual interviews; the zoology students self-reported changes in critical thinking abilities and identified the tools that impacted those changes.

Findings indicated that although social relationships with peers and instructors contributed to progress through the zone of proximal development, it was “engaging with research activities [that] altered student perceptions of knowledge as a key determinant of critical thinking” (p. 320). These students identified scaffolding learning as critical to their successful progression through the zone of proximal development. UNHM librarians incorporate scaffold learning strategies to frame new ideas and concepts when delivering information literacy instruction.

Huong (2007) undertook a study to examine the impact of the more knowledgeable peer, as designated in Vygotsky’s zone of proximal development, on foreign language learning among undergraduate students in a university setting. Students were divided into two peer groups; but one group included a more advanced student in the role of knowledgeable peer. Over the course of the semester the group meetings were recorded and each participating student experienced the peer-only (unassisted) and the peer plus knowledgeable peer (assisted) environments. Reflective journals and interview transcriptions provided additional data to assess impact. The study determined that the groups led by the knowledgeable peer were more task-oriented and able to move through group processes effectively because the advanced student regularly assumed the role of teacher and organized the group in accordance with the cultural norms of teaching.

Zone of proximal development and information literacy instruction.

Bhavnagri and Bielat (2005) examined a faculty-librarian collaboration integrating technology tools to facilitate the development of information literacy skills. Framing their study with Vygotsky’s zone of proximal development, the authors

focused on outcomes achieved utilizing two mediation tools to scaffold learning: bibliographic instruction and Blackboard Inc. (a course management system). In their collaboration, the role of expert shifted between librarian and faculty member depending on the tool and activity associated with the mediation. The data results demonstrated that within a triangle of collaborative learning, students, faculty, and librarian, were able to progress through their individual zones of proximal development and reach a higher level of knowledge.

Wang (2007) explored intersections between sociocultural theories and the learning environments created through information literacy instruction models. After a brief overview of traditional library instruction approaches rooted in behaviorist theory, the author reviewed several constructivist approaches that have been applied to information literacy teaching in recent decades. The author suggested that it is Vygotsky's theories, in particular the zone of proximal development, at the heart of a paradigm shift whereby information literacy instruction is changing from resource-based instruction to transferable skill-based development. As information literacy teaching methodology moves toward a learner-centered approach, the sociocultural features of collaborative learning contribute to shaping this new paradigm.

Wang (2007) discussed four models of collaborative learning currently employed by academic librarians for information literacy instruction: the jigsaw model; the reciprocal model; the problem-based learning model; and the resource-based learning model. The jigsaw method incorporates the reciprocal teaching strategy. In this strategy, each student is assigned one piece of the assignment puzzle to learn and then is responsible to teach that component to the class. The reciprocal

model requires students to answer a question about a topic by identifying what they already know about that topic. The entire class then provides feedback on each student's topic thereby expanding upon what is known and advancing each student's knowledge on the topic. The information is summarized and then students reflect on what new information is needed to fully answer the original question. In the problem-based model, students are presented with a problem to solve and through collaborative learning efforts uncover the shared knowledge of the group and identify areas that need to be researched to solve the problem. In the resource-based model students engage with library resources, under the guidance of the librarian, to learn through a hands-on exploration of the resource directly.

Several models identified by Wang are incorporated in the UNHM Research Mentor Program. The reciprocal learning model is compatible with the reading comprehension strategies employed by several of the UNHM First-Year Writing instructors. When librarians utilize a similar approach for information literacy instruction, students apply a familiar cultural tool as they construct new skills to generate and refine research topics. The active learning tasks included in the librarian's instructional toolbox feature the resource-based learning and the jigsaw models. These methods have proved effective and engaging for developing information literacy skills (Blair Vogt et al, 2013; Donahue, 2012). By applying Vygotsky's theories to information literacy instruction a deeper understanding and appreciation of the library's role in helping "all learners [become] potentially better learners" (Wang, 2007, p. 152) is realized.

Connections between the UNHM Research Mentor Program and Vygotsky's sociocultural theories of learning include: 1) the use of a more capable peer to facilitate growth through the zone of proximal development; 2) the use of mediated tools, such as scaffolding and active learning activities; and 3) a focus on collaborative reciprocal learning and increasing metacognitive skills. In a previous study, this researcher assessed the impact of the Research Mentor Program on first-year student learning. The study found that intentional incorporation of peer tutoring and cooperative learning models resulted in a richer learning environment for first-year students (Donahue, 2012).

Summary

This chapter included an overview of the professional literature with a specific emphasis on existing collaborations between academic libraries and college writing centers, the role of students in the delivery of reference and instruction services in academic libraries, and Vygotsky's sociocultural learning theories and the application of those theories in higher education classrooms and libraries. Chapter Three provides a description of the research design and methodology used to conduct a study to identify and describe the experiences of the research mentors who participated in the Research Mentor Program.

Chapter Three

Research Design and Methodology

Introduction

The purpose of this research study was to identify and describe the experiences of the research mentors who participated in the University of New Hampshire Manchester (UNHM) Research Mentor Program. The research question that guided this study was: what effect did participation in the Research Mentor Program have on the peer mentors who participated?

This chapter provides an overview of the research design and methodology used to identify the effects of participation in the program from the research mentors' perspective. The study participants and setting are described, the data collection techniques are identified, and the data analysis procedures are reviewed.

Exploratory Research Question

The Research Mentor Program was a collaborative initiative between the Library and the Center for Academic Enrichment (CAE). A critical element of this partnership was the peer-to-peer learning focus. Within the classroom, research mentors worked with librarians to model effective research strategies. Outside the classroom, they worked directly with students in individualized tutorials on both the writing and research aspects of their papers. The research mentors who participated in the program were accomplished students who were recommended because they demonstrated strong writing and research skills. Through this program, research mentors became the conduit whereby the librarians extended academic support beyond the library walls to reach first-year students at each stage of the research process –

from brainstorming topics, developing effective search strategies, and evaluating sources to preparing outlines, developing thesis statements, and drafting through the writing/revision cycle.

One of the goals program developers hoped would be achieved through these dyadic relationships was the establishment of a reciprocal learning environment whereby research mentors would improve their own research and writing skills while assisting their protégés to learn these skills. This goal was grounded in adult learning theories, like Vygotsky's (1978) sociocultural approach, that highlighted a collaborative approach to learning where peer-to-peer experiences foster deep learning and allow students to learn from one another. Several studies (Annis, 1983; Bargh & Schul, 1980; Benware & Deci, 1986; Fantuszzo et al, 1989; Magolda & Rogers) affirmed that as a result of the dyadic relationship both tutees and tutors experienced increased learning.

In her earlier research, Donahue (2012) demonstrated that UNHM first-year students experienced a positive progression in learning as a result of the peer-to-peer dyad, yet no previous research focused on the experiences of the UNHM research mentors. Motivated by an interest to understand the research mentors' perspective, the researcher sought to discover the everyday experiences associated with mentors' participation in the program. In this research study, participants described their role as research mentors and ascribed their perceived meaning to that role. Though this data an understanding of the effect participants attributed to their participation in the Research Mentor Program was realized.

Research Methodology

Qualitative research.

In choosing a research methodology it is critical to determine the research purpose and the particular strategies necessary to obtain the data required. According to Richards and Morse (2007) consistency is the hallmark of good qualitative research; “the [research] question goes with the method, which fits appropriate data collection, appropriate data handling, and appropriate analysis techniques” (p. 1). Qualitative researchers focus on understanding a human or social phenomenon in its natural setting with all its complexity to make meaning and create new knowledge. The goal of qualitative research differs from that of quantitative inquiry in that qualitative research does not attempt to prove a single truth but to explore multiple perspectives to reveal the nature of a given phenomenon (Creswell, 1998; Leedy & Ormond, 2001; Marshall & Rossman, 1999; Maxwell, 2005). Stake (1995) stated that “qualitative researchers treat the uniqueness of individual cases and contexts as important to understanding” (p. 39). This study was conducted using a qualitative research methodology in order to understand the experiences of the research mentors from their perspectives and the meaning they ascribed to participating in the Research Mentor Program.

Qualitative research typically serves one or more of the following analysis functions: 1) to describe a particular phenomenon; 2) to interpret and gain insight about a particular phenomenon; 3) to verify assumptions or theories within the context of a particular phenomenon; or 4) to evaluate the effectiveness of a particular phenomenon (Leedy & Ormrod, 2001; Peshkin, 1993). The purpose of this study was

to identify and describe the research mentors' experiences from their perspective. When selecting a research design, qualitative methodologies offer researchers an approach that "gets to the bottom of things, that dwells on complexity, and that brings us very close to the phenomena we seek to illuminate" (Peshkin, 1993, p. 28); therefore, this study employed phenomenological methodology.

Phenomenological methods.

In a phenomenological study the researcher "attempts to understand people's perceptions, perspectives, and understanding of a particular situation" (Leedy & Ormrod, 2001, p. 153). Through conversations with research mentors who participated in the Research Mentor Program, attitudes and beliefs that framed their understanding of the impact of participation were uncovered.

Phenomenology is an approach rooted in twentieth century European philosophy that seeks to explore the lived experiences of individuals to gain an understanding of the meaning ascribed to those experiences (Creswell, 1998; Hek & Moule, 2006; Kvale, 1996; Leedy & Ormrod, 2001; Richards & Morse, 2007; van Manen, 2006). Underlying assumptions associated with this philosophical approach include an acceptance that individual perceptions interpret the lived experience and that experience has meaning (Richards & Morse, 2007). Several phenomenological orientations classified by van Manen (2006) reflect the historical evolution of this philosophical movement. These orientations, derived from the philosophical traditions of European philosophers, included:

- Transcendental phenomenology (Husserl)

- Existential phenomenology (Heidegger, Sartre, de Beauvoir, and Merleau-Ponty)
- Hermeneutical phenomenology (Heidegger, Gadamer, and Ricoeur)
- Linguistic phenomenology (Blanchot, Derrida, and Foucault)
- Ethical phenomenology (Scheler and Levinas)

The common threads underpinning each orientation incorporate interpretative description, lived experience context, reflective and iterative process, and knowledge expression through language.

Among these orientations, the hermeneutical phenomenology approach acknowledges that understanding is an interpretive process not merely a descriptive one (Kakkori, 2009; Richards & Morse, 2007; van Manen, 2006). When exploring the lived experiences of others, the hermeneutical method engenders a reflective aspect that “broadens our horizon and enables us to see something differently than we had in the past” (Kakkori, 2009, p.24). In this study, the intention was to understand the lived experiences of the research mentors as they perceived that reality. Qualitative data collection methods, such as interviews and surveys, allowed the voices of participants to describe their experiences. The hermeneutical phenomenology approach allowed the researcher to interpret and reflect on those descriptions to grasp the essence of participation in the Research Mentor Program.

Participants and Setting

The eligible participants for this study were University of New Hampshire at Manchester (UNHM) students who completed the tutor development course (UMST 521) between fall semester 2004 and spring semester 2013 and served at least one

semester as a research mentor. Fifty-eight students met this initial criterion. Eligible students were sent an invitation asking them to consider participating in this research study. The invitation (Appendix A) stated that if selected to participate, the student was expected to participate in an hour-long interview conducted by the researcher. The invitation further noted all interviews would be recorded and transcribed, with a copy of the transcription sent to the interviewee to verify accuracy. Twenty students responded to the invitation. Two students declined to participate and eighteen students agreed to be part of the study's participation pool.

The invitation to participate in the study included the following six questions designed to form the criteria necessary to select a representative sample:

- In what semester and year did you complete USMT 521 – Tutor Development?
- How many semesters did you serve as a peer research mentor at UNH Manchester – include the semester you completed UMST 521?
- What was your status when you first began your coursework at UNH Manchester – freshman or transfer student?
- Did you complete ENGL 401 First Year Writing at UNH Manchester?
- Prior to becoming a peer research mentor did you work with a peer research mentor for research assistance?
- What was your age when you began serving as a peer research mentor?

These questions determined a set of criteria from which to select a sample of eight students to participate in this study. Interview studies rarely utilize random sampling

because the size of the study is usually too small for effective randomization (Hek & Moule, 2006).

The composition of the targeted population of fifty-eight students was 25% male and 75% female. The respondent pool contained two male students who agreed to participate in the study. By selecting six females from the remaining sixteen respondents, the study replicated the proportions in the targeted population. Phenomenological research attempts to illuminate the essence of a particular experience (Kvale, 1996); therefore, a small sample size was appropriate to this study's methodology.

According to Stake (1995), balance and variety are key attributes for building a good representative sample; noting that "opportunity to learn is of primary importance" (p.6). Students' answers to the six criteria questions allowed the interviewee pool to incorporate variety and balance. The variety attribute was achieved by including a range of students who completed the tutor training course across the targeted time span (fall 2004 through spring 2013). Students' answers to the remaining five questions allowed crafting of a balanced participation pool designed to elicit multiple perspectives thereby creating that "opportunity to learn" about the research mentors lived experiences.

The setting of the Research Mentor Program is the University of New Hampshire Manchester (UNHM). UNHM is a commuter campus located in the city of Manchester, New Hampshire. Manchester is the most populous and diverse city in the state (Quick Facts, 2014). The university's urban campus serves more than 1,250 students by offering 17 undergraduate degree programs and 14 graduate

degree/certificate programs (Fast Facts, 2013). Degree programs offer a broad liberal arts core with an applied emphasis in coursework that incorporates internships and service-learning. Small class size and teaching excellence are hallmarks of the college. Research mentors traditionally worked with the First Year Writing classes. These classes were capped at fifteen students per section and were usually limited to five or six sections per semester.

Seven interviews for this study were conducted in the library at UNHM. Five interviews were conducted face-to-face with both researcher and participant physically present. Two interviews were conducted remotely using Skype® to replicate the face-to-face experience. The final interview was conducted over the telephone. All interviews were transcribed and copies of the transcriptions were sent to participants to verify the accuracy of the transcription. These conversations were filled with rich descriptions, common themes, and reflective memories that formed the framework for portraying the essence of the research mentors' experiences.

Data Collection

In qualitative research, the data collection strategies must align with the purpose of the research (Richards & Morse, 2007). Marshall and Rossman (1999) declared that phenomenological research attempts to “capture the deep meaning of experience in [the participants'] own words” (p.61) allowing the researcher to reveal the individual lived experience. Through this study, the researcher wanted to understand the experience of participating in the Research Mentor Program from the research mentors' perspective. The conversations generated from individual

interviews enabled discovery of the nuances of the research mentor role, and reviewing the transcripts deepened the researcher's understanding.

The qualitative data collection methods used in this study included interviews, surveys, and document review. Incorporating multiple modes of data collection is a technique referred to as methodological triangulation (Creswell, 1998; Denzin, 1970; Hek & Moule, 2006; Jick, 1979; Maxwell, 2005). Triangulation is one approach to meeting the demand for reliability and validity in qualitative research. Through triangulation, data is confirmed through multiple modes of inquiry thereby minimizing misinterpretation and strengthening the reliability of conclusions (Stake, 1995; Creswell, 1998). Stake (1995) suggested that triangulation protocols were used when the researcher wanted "to gain needed confirmation, [or] to increase credence in the interpretation" (p. 112). This study used interviews and surveys to triangulate data collection to strengthen the validity of the study.

Interviews.

Qualitative researchers employing phenomenological methods depend on in-depth interviewing (Leedy & Ormrod, 2001; Marshall & Rossman, 1999). Seidman (2006) noted that in-depth interviewing serves as the conduit for "understanding the lived experience of other people and the meaning they make of that experience" (p.9). Through these interviews, the researcher and participant engage in conversations "whose purpose is to obtain descriptions of the life world of the interviewee" (Kvale, 1996, p. 5-6). In this study, interviews were an essential method for exploring the experiences of the research mentors. These conversations were filled with memories and stories of what it was like to be a research mentor. Some descriptions offered

detailed accounts of the dyadic exchange; while other descriptions were less full as the interviewee struggled to recall specifics. Yet it is in the accumulation of data across all interviews that an understanding of the essence of the phenomena can be realized.

The interviews conducted in this study followed a semistructured format. Semistructured interviews contain open-ended questions designed to elicit detailed responses. This format uses both planned and unplanned probes as follow-up questions when participants' responses require further clarification. The semistructured format is used when the researcher has a precise topic to pursue or has sufficient knowledge of the phenomenon to develop advance questions (Richards & Morse, 2007; Rubin & Rubin, 2012). As one of the Research Mentor Program developers, the researcher had sufficient knowledge of the program to craft advance questions which required careful attention to the potential for bias or undue influence in conducting these interviews. Although qualitative researchers have long acknowledged that the "researcher *is* the instrument of the research" (Maxwell, 2005, p. 37-38), it is critical for researchers to "suspend any preconceived notions" (Leedy & Ormrod, 2001, p.153) that might influence outcomes.

A set of seven guiding questions (Table 1) was prepared for this study. These questions were crafted based on Seidman's (2006) approach for creating a context for the participant's experience. First, the participant is asked to articulate their life history prior to the experience studied; second, the participant is asked to reconstruct a detailed description of the experience itself; third, the participant is asked to reflect on the meaning of that experience. The interview questions were used to guide participants through an abbreviated form of this approach in the single interview.

Interviews were audio-recorded and each interview was transcribed. A copy of the transcript was sent to each participant. Stake (1995) described “member checking” as a process whereby the participant reviews the data collected for accuracy. Participants in this study were encouraged to review their transcripts and provide either clarifying or augmenting comments.

Table 1- Guiding Questions for Interviews

1. Please tell me about your experiences prior to coming to UNH Manchester. Describe any instances where you were engaged in teaching or tutoring. Can you identify and describe any instances when you served as a mentor, either informally or through a structured program?
2. Please describe your role in the ENGLISH 401 classroom as a research mentor. How did you feel about that interaction?
3. Please describe a typical tutorial session. What did you do? What did the student do? How did you feel about the exchange that took place?
4. Please describe your interactions with the librarian in the classroom. What were your expectations for your role?
5. Please describe the activities that best prepared you to fulfill the role of research mentor. How might you have been better prepared?
6. How did the overall experience impact you?
7. Thank you for this valuable information, is there anything else you'd like to add before we end?

Survey.

Although surveys are typically utilized in quantitative research to statistically explain certain features of a population, such as demographic details, in qualitative research the survey can be used to elicit attitudes and perceptions (Hek & Moule, 2006). A survey that measures self-reported data assumes that participants will reply

honestly and accurately (Marshall & Rossman, 1999). A survey instrument was included in this study to elicit additional perspectives from the participants regarding the impact of their participation in the Research Mentor Program.

The survey used in this study was adapted from the *Survey Regarding Satisfaction, Learning and Development of Peer Mentors in Higher Education* (Posa, 2011). This survey was developed to quantitatively measure satisfaction and perceived learning and development of university peer mentors. In 1996, the American College Personnel Association (ACPA) published a document entitled *Student Learning Imperative: Implications for Student Affairs*. This document endorsed the following hallmarks of a college educated person:

- complex cognitive skills such as reflection and critical thinking;
- an ability to apply knowledge to practical problems encountered in one's vocation, family, or other areas of life;
- an understanding and appreciation of human differences;
- practical competence skills (e.g., decision making, conflict resolution); and
- a coherent integrated sense of identity, self-esteem, confidence, integrity, aesthetic sensibilities, and civic responsibility. (ACPA, 1996, para. 2)

Posa (2011) drew upon this publication to identify nine categories of learning and development that formed the core of her survey. Those categories were: 1) academic success; 2) collaboration; 3) communication skills; 4) decision-making and problem-solving; 5) diversity; 6) intrinsic benefits; 7) leadership development; 8) reflection; and 9) student engagement (p.35).

Posa authorized modification and use of her survey, which involved removal of the demographic and satisfaction questions then revision of the core learning and development questions by substituting questions related to development of information literacy skills for the questions pertaining to leadership development. The modified survey is found in Appendix D.

A sample of a multiple choice question is provided in Table 2. The survey was constructed using SurveyMonkey® and was administered online. Approximately one week following their interview, each participant received an email invitation to complete the survey which contained a link to the SurveyMonkey® site. All eight participants completed the survey. The survey provided participants an opportunity to self-report their perceptions of the impact of participating in the Research Mentor Program.

Table 2 – Sample Survey Question

I use Boolean logic more effectively to construct search strategies when using the library databases.

- Strongly agree
 - Somewhat agree
 - Neither agree nor disagree
 - Somewhat disagree
 - Strongly disagree
-

Document review.

In qualitative research, document review provides secondary data to complement the data collected from in-depth interviews (Hek & Moule, 2006). Glesne (2006) noted the value of this secondary data when she determined that “documents corroborate your observations and interviews and thus make your findings

more trustworthy” (p. 65). Documents serve to illuminate context or historical perspective (Marshall & Rossman, 1999) and improve the quality of interviews by identifying significant or sensitive issues (Rubin & Rubin, 2012).

Documents available for this study were limited to anecdotal documents. Although research mentors completed session reports at the end of each tutorial describing the session activity, these were not available for review. The Center for Academic Enrichment (CAE) retains these session reports for the current three years only. Reports for previous years were discarded.

The documents reviewed in this study were the interview transcripts and the tutor development course syllabi. Syllabi for courses offered between spring semester 2004 and spring semester 2013 were reviewed. These documents provided a context for understanding participants’ interview comments about preparedness for the role of research mentor and recorded how the course content evolved over time.

Informed consent.

Prior to collecting data for this study, each participant signed an informed consent form acknowledging a willingness to participate in the study. This research study was approved by the University of New Hampshire’s Institutional Review Board (Protocol #5052, expiration date January 24, 2015) and accepted by Plymouth State University’s Institutional Review Board. The informed consent letter for the interview protocol is included in Appendix B. The informed consent for the survey protocol is included in Appendix D.

Individual participants’ names and information remained anonymous. To protect the identities of the participants, each participant was assigned a pseudonym.

Only the researcher had access to the identifiable information. Collected data was stored in a locked office at the researcher's home during the study. Upon completion of the study the data was transferred to a locked file cabinet at the UNHM Library for storage.

Limitations.

Awareness of the potential limitations strengthens the trustworthiness of the study. As Glesne (2006) remarked, the researcher can only “do the best that [she] can under certain circumstances” (p.169). This study contained several limitations: self-reported data collection; small sample size; generalizability; and researcher bias. Interview and survey methods required participants to self-report perceptions, attitudes, and activities. Participants relied on memory to recall and articulate descriptions; some participants were several years removed from actively serving in the research mentor role. Creswell (1998) recommends a sample size of three to ten participants for phenomenological research. Although the sample size for this study was within the recommended range, the small number of participants may not reflect the experiences of all research mentors who participated in the program. The results of this study may be difficult to generalize to a larger population.

Researcher bias was a limitation of this study. The researcher's previous connection to the Research Mentor Program required an awareness of the potential for bias. It was critical for the researcher to refrain from asking leading questions that might unduly influence the participants' responses. The data analysis approach involved recognition of the researcher's previous involvement in the development and evaluation of the program. By consistently and consciously striving to suspend any

preconceived ideas, the researcher was able to hear the voices, stories, and perceptions of each participant as they described their unique experience as a research mentor.

Data Analysis

Qualitative data analysis is a process for organizing and interpreting the data collected (Creswell, 1998; Glesne, 2006; Leedy & Ormrod, 2001). Marshall and Rossman (1999) declared data analysis “a messy, ambiguous, time-consuming, creative and fascinating process” (p. 150). Qualitative data analysis is a multi-step procedure that includes organizing data to identify significant statements or themes, then coding and sorting data to generate and test interpretations, and summarizing findings (Giorgio, 1997; Marshall & Rossman, 1999; Maxwell, 2005; Rubin & Rubin, 2012). In this study, three methods were used to collect data; semistructured interviews, surveys, and document reviews. Combining descriptive stories from the interviews, personal perceptions from the survey, and context from the documents enabled the researcher to gain a deeper understanding of the role of the research mentor.

Analysis of interviews.

According to Seidman (2006), the challenge with interviewing is to separate the functions of collecting and analyzing the data. Acknowledging that some level of analysis will inevitably begin with the first interview, he cautions against “imposing meaning from one participant’s interviews onto the next” (p.113) and recommends deferring in-depth analysis until all interviews are completed. In applying this suggestion, a holistic analysis of the data collected was performed.

The interviews were completed, recorded, and transcribed. Participants were given a copy of the transcribed interview to review and verify. All eight participants completed the review; two participants offered clarifying comments. Interview data were analyzed by reading and re-reading transcripts alongside listening to the interview recordings. Significant concepts and themes were identified and coded across the eight interviews. The complete coding is summarized in Chapter Four.

Analysis of survey.

Survey instruments are useful for statistically describing specific attitudes or perceptions of a population (Hek & Moule, 2006). Survey instruments offer “accuracy, generalizability, and convenience” (Marshall & Rossman, 1999, p. 130), so they can be advantageous when used to complement qualitative research data. In this study, SurveyMonkey® analytical tools were used to analyze participants’ responses. These tools allowed viewing individual and collective results to build robust charts and graphs and present findings visually. Survey data was found to support concepts and themes uncovered in the interview data.

Analysis of document review.

Participants were sent their individual interview transcript and asked to verify that the transcript was an accurate reflection of the interview exchange. Six participants confirmed that the transcription was accurate. The remaining two participants supplied clarifying information for items that were marked as inaudible on the transcript. In addition, one participant included a supplemental statement clarifying his remarks about the preparedness level of his tutees.

Participants reported the semester and year in which they completed the Tutor Development course; two students completed the course in the same semester. Seven syllabi corresponded to the dates identified within the range beginning in spring semester 2006 and ending in spring semester 2012. These seven syllabi were reviewed to establish a context for participants' perspectives about preparedness to take on the role of research mentor. Course goals and objectives were compared to the participants' interview responses to identify supporting evidence to further validate findings.

Summary

This chapter provided an overview of the research design and methodology used to identify the impact of participation in the program from the research mentors' perspective. The study participants and setting were described, the data collection techniques were identified, and the data analysis procedures were reviewed. Chapter Four will present the major findings of the research study.

Chapter Four

Findings and Data Analysis

Introduction

This chapter describes the results of a phenomenological study conducted to identify and describe the experiences of the research mentors who participated in the University of New Hampshire Manchester (UNHM) Library's Research Mentor Program. These findings were obtained using three data collection methods: semistructured interviews (Appendix C); surveys (Appendix E); and document reviews. Data was triangulated through multiple modes of inquiry in order to minimize misinterpretation and researcher bias as well as strengthen the reliability of the study (Stake, 1995; Creswell, 1998). The research question that guided this study was: What effect did participation in the Research Mentor Program have on the research mentors who participated?

Study Participants

The target population for this study was the fifty-eight students identified who served as research mentors and completed the Tutor Development course between fall semester 2004 and spring semester 2013. Invitations to participate (Appendix A) were sent to each eligible student. Twenty students responded to the invitation representing a 35% response rate. Two students declined to participate. Eighteen students expressed a willingness to be part of the participation pool; two males and sixteen females. In the target population, male students comprised 25% of the total population and the remaining 75% were female students. For the purpose of this study, this demographic was replicated by limiting the participant pool to eight

students; two males and six females. The two male respondents were included in the participant pool and six females were selected from the remaining female respondents to create a representative sample. Three criteria were used to determine representativeness: 1) a variety of students who completed the Tutor Development course in different semesters; 2) a mix of freshman and transfer admit status; and 3) a mix of students who completed the First Year Writing course at UNHM and those who completed the course prior to admission at UNHM. The characteristics of the final participant pool are shown in Table 3 below.

Table 3 – Participants’ Characteristics

Participant	Course Semester	Admit Status	First-Year Writing at UNHM
Oscar	Spring 2006	Freshman	Yes
Rosalind	Spring 2008	Transfer	No
Reba	Fall 2008	Transfer	Yes
Carrie	Spring 2009	Transfer	No
Carlos	Fall 2009	Transfer	Yes
Phoebe	Fall 2011	Transfer	No
Malia	Spring 2012	Freshman	Yes
Maura	Spring 2012	Freshman	Yes

Semistructured Interviews

This study utilized semistructured interviews to explore the experiences of the research mentors. In qualitative research, interviews are an effective method to probe people’s lived experiences to discover how individuals make meaning of their experiences (Kvale, 1996; Seidman, 2006). Through the descriptions and stories

shared in these one-on-one conversations, the researcher was able to understand how research mentors perceived their role and how they described the impact of participating in the program.

Interviews were completed, recorded, transcribed, coded, and summarized. Data analysis afforded the opportunity to compare responses across the participant sample to identify commonalities and differences. A set of guiding questions (Appendix C) was developed and used in each interview. In addition to the guiding questions, the researcher utilized planned and unplanned prompts to gain clarity or to encourage more detailed answers (Kvale, 1996; Seidman, 2006). Participants were asked to describe: 1) their previous tutor/mentor experiences; 2) their role in the First Year Writing classroom; 3) their role in a typical tutorial session; 4) their interactions with the librarian in the classroom; 5) the tutor development class activities that best prepared them for the role of research mentor and how they might have been better prepared; and 6) how they were impacted by the overall experience of participation in the program. Before ending the interview, participants were asked if there was anything else they wished to add.

Previous tutor experience.

Four participants described prior informal tutoring experiences such as helping friends or classmates with homework problems. Maura described working with classmates on homework assignments. “I remember either in study group . . . sometimes working on math, that type of stuff. We’ll go through the homework together.” Reba noted that “specifically in chemistry I would help people who really didn’t understand.” When Carrie helped friends with homework she explained that “it

was more along the lines of working with a classmate who maybe was having difficulty in the class and working with them to help them understand the content of the class.” Rosalind recalled helping friends with statistics:

I remember one girl; she was an EMT and lived down the hall in my friend’s dorm. She figured out I was the smart one of the group. And we’d sit in the hall on Friday and Saturday nights before Monday morning class and do statistics homework. Check each other. She needed it for the major, I didn’t but I got it really well.

Two participants identified formal tutoring experiences. Oscar stated that when he was in hospital corps school, he was “one of the educational petty officers [assigned to] running study groups. I found it very helpful for me to have to teach people to then do well on the (twice-weekly) quizzes.” Malia remembered serving as a math tutor to a middle-school student when she was in high school. “In 9th grade algebra class, my teacher asked if I could tutor a middle school student. It wasn’t through a program, but [her] parents [came] to my teacher and asked if there was somebody that could help their daughter.”

Previous mentoring experience.

Oscar and Rosalind also identified experiences where they served as mentors on their high school sports teams or in community youth organizations. Oscar was the captain of his high school wrestling team and described mentoring the younger students by “working with them and even helping them out with school work occasionally or talking to their teachers when something was going on with them.”

Rosalind stated that she continues to be “a 4-H member and leader. From the time I was 12, I have been doing mentoring, leadership roles, all sorts of stuff.”

Role in the First Year Writing classroom.

Seven participants provided descriptions of their experiences in the First Year Writing classroom (the eighth participant, Malia, did not describe her experiences). In every instance, participants acknowledged that the extent of their role in the classroom was determined by the professor’s willingness to support engagement. Participants described three ways they contributed to supporting research and writing within the classroom: sharing personal examples of their writing and research experiences; assisting with one-on-one or small group exercises; and developing and conducting short workshops. Some participants experienced more than one of these opportunities as illustrated in Table 4 below.

Table 4 – Role in First Year Classroom

Participant	Personal Examples	In-class Exercises	In-class Workshops
Carlos	X		
Carrie			X
Maura		X	X
Oscar	X		X
Phoebe			X
Reba		X	
Rosalind		X	

Oscar said that when he was asked to make a class presentation “mostly it was discussing my experience as a 401 (First Year Writing) student, [for example] things that I did, research that I did, how I found my sources.” Carlos noted that when he would “try to help her (the professor) engage the students, she would ask the question, nothing was going on. I would throw a leading answer that would help broaden the discussion or give some of my own personal experience.”

The in-class activities focused on either writing fundamentals or research techniques. When describing her role in the classroom, Reba explained “I think I was helpful during in-class exercises...[the professor] had somebody else other than her(self) working with small groups just on sentence structure and organization and that was a learning experience for me.” Rosalind discussed working one-on-one with students in the class:

I basically walked them through how to use the database. Model the process: here’s how you start your research, here’s the resources you are looking at, here’s how to assess, analyze and criticize and figure out what you need. It will boil down to figuring out what your topic is and what the question is you are trying to answer. Then figuring out the key words that you can use to pull up information with that answer.

Carrie described the opportunity to run research workshops during the class. She acknowledged the professor for supporting her in these activities:

I was really lucky because I worked with a professor... [who] let me take the role of a research mentor and a writing tutor and really make it my own. I got to spend not only class time presenting how to do research starting from the

most basic of narrowing down the topic and thinking of a research question, to how to use the databases, how to use the internet responsibly as a researcher...and then I got to meet with students one-on-one.

Phoebe remarked that her professors were very supportive of her in-class role and allowed her to present workshops during class time:

I was lucky to work with a few really great instructors who allowed me to...have freedom in the classroom and come up with workshops. I really got to know the students on an individual basis so I felt that I was more than just the class link tutor in most of the 401 (First Year Writing) classes. A lot of them (students) felt comfortable talking about school-related issues with me, as well as homework issues and everything like that.

An example of a workshop developed by Maura involved teamwork and quick thinking:

I remember I was working with a class on citations and what I did was I took flashcards and I put different parts of a citation on each flashcard. I broke the class up into two teams. They both had the same citations and whoever could put it together the fastest would get a point. . . .It was a game, so it was fun but by the end they learned a lot about APA citations because they [were] putting it together.

Classroom role follow-up question.

After participants responded to a guiding question about their role in the First Year Writing classroom, a follow-up planned prompt was asked to encourage a more detailed response. Participants were asked to describe how they felt about the

interaction with students in the classroom. Six participants offered their perceptions on these interactions:

- I remember the first class I was in as a [research] mentor was with a brand new teacher . . . I didn't like the way that she did things and I really didn't have a place to say what she could or couldn't do...she wasn't focusing on researching and really didn't care if they (the students) got it right. So I really had difficulty with that...trying to say this is what you are supposed to do and then having her be like...no that's okay. My second class...she (professor) was brand new. She was excellent...I learned a lot from her, so I was happy to help with the students learning as well. That was a really good experience...and the students said so as well. (Reba).
- I felt pretty comfortable...I enjoy having the conversations and figuring out what people are looking to do with their project or paper...I liked when people had questions and they wanted answers...I liked being able to help them with that...I felt comfortable in that sense (Malia).
- I guess it depended on the situation. Sometimes it would be really helpful for both of us because we would be discussing different things they (the students) could search...It wasn't so much me telling them oh you should do this as kind of going through the process together. Other times, it was a little trickier because they couldn't find anything on their topic or they were a little uncomfortable using the school databases (Maura).
- They (the interactions) gave me a lot of confidence in my abilities to interact with people...to get my own research done, to do my own homework. I guess

I'm a people person. It was really motivating to me to have that response to know that I was helping people and I feel like I was able to transfer that to my own work (Phoebe).

- It was very rewarding...very confirming...it made me feel good because they would note or notice that I knew what I was doing. I like it when people feel confident and I know what I am doing...my own faculty that I was doing work for note(d) that my quality was better. My quality of the paper was better and...I had improved (Rosalind).
- I really love working with people where they do research...even if it is something I personally wouldn't choose to do research on. I just find each time you work with a different student, you open yourself up to new methods to use, try to find new search terms, research. Each student that I got to work with, I feel like I learned a lot too...not just the content of the research, but more in terms of better research methods (Carrie).

Role in a typical tutorial session.

All participants agreed there was no typical tutorial session; each session was structured based on where the student was in the research and writing process. Carrie described the situation this way:

If the student was still trying to narrow down the topic, we might actually just spend the tutorial brainstorming, which would consist of me asking question after question, and I would write down the answers so they had it for later. If the student already had started their research, I would ask them if they had written anything from the sources that they had so far . . . if they evaluated the

sources that they had so far. If we had some writing done, we'll talk about what I called the empty spaces. Things they needed to answer within the research paper still and what types of sources they might be looking for to answer those questions.

Participants organized the tutorial sessions in various ways. Malia and Phoebe explained that they started each tutorial with small talk in order to put the student at ease. "I would introduce myself to them, and get their name, and what their major was, and that type of thing...and then ask them how their day was going...loosen up the interaction so they are comfortable"(Malia). Phoebe described how a tutorial often began: "a student would come in and I would ask them how the class is going in general...and we might chat about that for a few minutes."

Carlos and Reba asked students to submit papers and notes in advance of the tutorial. Carlos explained "at some point I would ask to see the paper prior to the tutorial just because they were so difficult to weed out the problems...I would get prepared for it (the tutorial)." Reba stated "I would normally have them send me their paper ahead of time...if they had a paper...or if they had notes or specific questions, I wanted them ahead of time. And they (the students) were all very good about doing that."

Participants described reading through portions of the paper with the students during the tutorial. Oscar remarked that when a student brought in a draft he "would read through it really quickly and make some pencil marks and then ask questions." Malia noted that "if they had a paper...I did a quick two-minute speed read through, focusing in on the topic, beginning and the conclusion, and trying to brush through the

mid-paragraphs and see if they lined up.” When a student brought a draft to the tutorial, Maura said “we’ll go through it together, look through the paper and see where they might need to find more information.”

Participants identified several writing and research concerns that were frequently addressed in tutorial sessions. Carlos worked with students in a developmental English class and found that these students struggled with basic sentence and paragraph structure. In response, he said “I think basically what I would do often is I would use the cold reading method and read it (the paper) out loud to them...and so we’d look for the natural break points.”

Participants reported using a variety of strategies to scaffold learning when addressing the organization of the paper. Reba said that when she “focused on organization (issues)...I would ask the students while I was there with the paper to help me outline and say what does this paragraph mean and the next one...(the) teacher also had a rubric, so we’d compare it (the paper).” Rosalind described how she worked with students on organization issues; “we’d do some mind maps, word webs, outlines...sometimes doodles...I’m a big fan of doodles just to get an idea.” Phoebe explained that she “asked them (students) to summarize what each paragraph talked about and then I would write it down for them so they could see where their argument was going.” Malia recalled:

That part of my job was to kind of help me find out what they wanted to convey through the paper or what they wanted to find out. We would do some bubble diagrams, or some web diagrams to let them talk out what they wanted to find...and also teaching them how to be more open-minded, so not

funneling in on the research but open to what it does show. I helped them make outlines for the flow in the paper.

When students needed additional, or appropriate, sources to support their writing, all participants acknowledged that they referred students to the librarians. When time permitted during tutorial sessions, participants described guiding students to effectively search the library's online databases. Rosalind's summary of the steps she used to guide her students resonated with the experiences described by other participants:

I would sit on one side and the student on the other side; I would get the student to do most of the driving. . . You have to give them ownership, you have to let them drive, you have to be as indirect as you can. [I would] ask them questions, what would you do from here? If they don't know, model it. If they don't know, prompt them. If they really don't know, do it and show them what to do and go from there.

Tutorial role follow-up question.

After participants responded to a guiding question about their role in a typical tutorial session, a follow-up planned prompt was asked to encourage a more detailed response. Participants were asked how they felt about the exchange with students in the tutorial sessions. Six participants offered their perceptions:

- That depended on the student. For the most part, I would say maybe 80% to 90% were, if not enthusiastic, at least willing to listen and ready to take advice and wanted to do a good job...very few students who were truly apathetic about it (Oscar).

- I felt pretty good. I had a wide variety of students. Students that struggled, even with the English language, and some students obviously wrote very well and their grammar was perfect...sentences were great...but for most of the time I felt pretty good about what we accomplished (Reba).
- I think what made some of them (tutorials) hard was the requirement for students to come in. Sometimes I felt like I had to direct more when...I could tell they didn't want to be there. They weren't rude about it, sometimes it was hard for them to come up with things to talk about...I felt bad searching for things to talk about. I didn't want to make to make it too awkward or anything...we were usually able to accomplish a good amount (Malia).
- I find it most comfortable when it is more casual, instead of them (the students) relying on me to give them the answers or tell them what to do. I think it is best for both of us when it's a discussion. We are both providing input and feedback and brainstorming ideas together (Maura).
- I really enjoyed working with students in whatever stage of the research process that they were working on. I felt, this is probably selfish, I felt that working with other students made me better at my own research. One of the things I learned to do, it took me a while to get there, to tutor myself and so I had to learn how to turn on and off my tutor brain because it can get in the way sometimes if you are writing. I figured out how to have those conversations with myself and evaluate my own draft...so in a way I was able to take the tools that I use as a tutor to work with other students and learn to apply them to myself (Carrie).

- I felt like I was able to establish some really good mentoring relationships. I would see the students later on and I would ask them how they were...small talk. They would maybe ask me questions about what should I (they) do about this class...which some I wasn't able to help them with. It made me feel like I definitely had a purpose in the classroom and that I was an essential piece to that learning environment (Phoebe).

Interactions with librarian in the classroom.

Participants described a range of interactions with the librarian when information literacy instruction was delivered in the First Year Writing classroom. Carlos and Reba reported that they did not participate in the instruction component but did attend the session and learned alongside the class. Malia explained that her course schedule did not permit her to attend these sessions but she recounted that she “tried to find out from the students when they came to see me what they had been told” in order to understand what they knew about the research process.

Oscar described his experience providing resource presentations. “I demonstrated using the catalog and how to use databases and stuff like that...most people, even with the info-lit session, had not much of a grasp on how to find things.” Rosalind told about the resource presentations that she conducted. “I would do a presentation of encyclopedias and how to pull out topic ideas.”

Carrie, Maura, and Phoebe were highly engaged in the instructional sessions. Each of them acknowledged that the librarians gave them the ability to choose the level of participation desired. As Maura explained “they (the librarians) were open to how much or how little I wanted to do. That encouraged me to step out of my box a

little bit and try . . . each time I did it to try new things.” The common experiences that they shared routinely began with meeting the librarian to discuss the class climate, the research topics chosen, and a plan of action for the instructional session. Maura explained that she met with the librarian to “talk about getting a schedule down of what we plan to do. Usually they will ask what I feel comfortable doing.” Carrie described preparing with the librarian for the instructional session:

We’d meet together and discuss exactly what she wanted to do and I would discuss with her where the students were in terms of their development as far as understanding information literacy, and the kinds of topics they were looking at so the workshop itself was more meaningful to the students.

During the instructional session, they often modeled the process for the class. Phoebe described her experience. “If the librarians had [students] brainstorm keywords or questions, I would do the same thing. When we were done, we’d talk about what I did . . . what I could do better and . . . my reasoning behind doing things.”

When students were actively searching the databases, the participant would circulate among them to answer questions and guide them in the process. Maura recalled an experience helping students find possible topics for a research paper. “We’d go to the databases . . . I would walk around to different people and ask how is it going? Are you finding enough sources? Sometimes we’d come up with key words they could search.” Phoebe described a similar experience:

When they got into the databases, I [was] a second set of eyes and ears. If anybody had a question, I would try to answer it, if I couldn’t I would have [the librarian] come help. I would listen [to] know the answer the next time.

Librarian interactions follow-up question.

After participants responded to a guiding question about their interactions with the librarian during delivery of information instruction in the First Year Writing classroom, a follow-up planned prompt was asked to encourage a more detailed response. Participants were asked to describe their expectations for themselves as they participated in the librarian-led instructional sessions. Two participants shared their comments:

- I would say they (my expectations) were for me to be present, not just physically but also mentally, in the classroom...and...getting a feel for the student and try to figure out the best way to go about assisting them in the writing process (Phoebe).
- I guess what I expected from myself is, especially where I took 401 (First Year Writing) as a student here myself, to reiterate to the students that I went through the process, I know how tough it can be...some of the success or the problems that I encountered...really relate to them as a peer (Maura).

Tutor Development class.

When asked about the Tutor Development class, participants recalled discussing theories and participating in various activities. Participants provided examples of the activities they felt best prepared them to take on the role of research mentor. Carlos, Oscar, and Reba noted the readings and activities related to understanding learning styles. Carlos remembered “discussions of different strategies to play...not that I put them in perfect practice but I would understand them as part of a grounding of what a tutor is, for example scaffolding.” Reba appreciated that

understanding the different learning styles was an approach she could apply to her own learning. She described how she used this knowledge in the tutorial “especially [when] students get frustrated. It was like, let’s take a step back and talk about learning styles and how you learn best and let’s try to do it the way you want to do it.”

Malia felt that the coursework incorporated “theories about learning and the strategies people use to kind of assess that and also [how] to incorporate that into a tutorial.” An example she offered was using web diagrams with visual learners to “break down their paper and see what they were trying to convey.” Although Oscar expressed that he found discussing “learning strategies... [and] taking all the tests to figure what type of learners we were and seeing the differences among the class...[as] eye opening” for him; he also admitted that he rarely “thought too consciously about it unless somebody brought it up...unless they said they needed to do something to be able to learn.”

Carrie, Maura, Phoebe, and Rosalind did not discuss specific theories but rather focused on the research skill-building activities that prepared them for future tutorial sessions. Carrie described a role-playing exercise on keyword searching that went wrong:

I ran into problems...it took me a while to get over that hump and [the librarian] said this is a good way to show them (tutees) how issues arise, but you should...model what you are thinking...say out loud what you are thinking as you come to a solution.

She thought this was a helpful approach to use with tutees because “showing them that sometimes you do run into issues and you don’t magically become good at doing research...it is a trial and error process.”

Rosalind recalled examining student papers: “We’d analyze different types of student papers...read through a couple of short sample papers and figure out what the issues were. Sometimes it was a research issue...sometimes it was developmental issues...sometimes it was some other issue entirely.”

Maura described mock-tutorial exercises:

The librarians play the role of the tutee and come in with different assignments and we would have to tutor them...and it was really helpful because you would get a wide range of different students. Not everybody is going to be the same when you work with them. Sometimes we had challenging tutorials and we had to get feedback from each other [about] how you would handle situations like that.

Phoebe found the mock-research project very helpful in preparing her to work with tutees:

We did a project where we each were given a topic. I got something science related...biology or something...and I’m terrible at science. I was a little intimidated. We actually just had to research specifics about the topic. We didn’t actually have to write a paper or an annotated bibliography. We did have to form a process and present it to the rest of the class. So I had to say I chose these keywords because I asked myself these questions and that led me to this database. I entered the keywords and I didn’t choose this article

because it is from 1999...it was outdated. We had to explain what we did and why. I thought this was very helpful. I'm big on kinetic learning. I like to do things. If I can't do it, I will have a hard time figuring it out. It was really, really helpful for me.

Tutor Development course follow-up question.

After participants responded to a guiding question about the Tutor Development course, a follow-up planned prompt was asked to encourage a more detailed response. Participants were asked to describe how the Tutor Development course might have better prepared them for the role of research mentor. All participants provided their perceptions:

- We were probably told this, but I think knowing that you can't always find even one source with a student. Because I feel like there were times when I could have saved the student a lot of trouble and saved myself a lot of trouble by pausing in the process and saying why don't we go right now to the library. And I know they probably said that. I think that being emphasized a bit more would have been helpful (Phoebe).
- I feel like I was prepared. The best way to learn, I think, is actually doing it yourself. So the more you work with students and the more you have these simulations in class, the better prepared you are. And I do think we did a number of those activities that I found really helpful. I can try to apply it to my tutorials. I can't really think of anything that I wanted from the class that I didn't get from it (Maura).
- I don't really think there was anything different that would have helped more

other than possibly fully integrating, not separating, the research tutorial and the writing tutorial because they are all one. I didn't realize until that point how much research influences writing and since then it's been my mantra. If you don't have good research, you won't have good writing. I don't care how good you can make it sound, your ideas won't be solid (Rosalind).

- The only thing that would be useful is, because we all have different research interests, I think it might be useful is if we can break up the...let me think how to say this...I don't know, like a cheat sheet or something [that] tells you these databases are best for this information. There's just so many databases and so many places to go and as a research mentor, it is somewhat overwhelming (Carrie).
- I would say one of my weaknesses is the citations. I think I would have [done] a class on citations, on all different types of citations. We didn't narrow in on each individual one...like MLA or APA. I was a science major; we usually went by the APA format, and I had MLA from high school...it would have been helpful if we spent more time on those and also the Chicago way of citation. One student came in with that one. I was unfamiliar with it; luckily we had the reference books for it. I think citations are tricky, that's the one thing. I felt personally they had covered a lot of the basics. I did feel prepared, so I didn't feel like there was a lot missing (Malia).
- I'm not sure whether or not we got trained on it, we may have and I just didn't retain it. When it came to not having the answer, I wish I knew how to react better to that. That happens, or it happened to me, and not really knowing

where to go with that especially when they (tutees) look to you for answers and you don't have them. It would be nice to know, what do I say and where do I direct them. For the research I knew to direct them to the librarians, they will know better than me. That was rule number one...[if] you don't know the answer, the librarians do (Reba).

- Not anything specific that I can think of. A lot of it ends up being OJT (on the job training) anyway (Oscar).
- I finished the [Tutor Development] class as I was finishing the [First Year Writing] class. Especially early on, in the early papers I wasn't fully prepared with all the strategies in place. And one more thing, maybe kind of being a bit more experimental in seeing what succeeds for students...I don't know if I would necessarily. I knew they were appreciative, but I think anything with a feedback loop is doing something, seeing and then there is obviously a reflective moment (Carlos).

Impact of overall experience.

Participants described the various changes they experienced as a result of their research mentor role. Participants perceived changes resulting in improved communication and leadership skills. Participants noted connections between their research mentor experiences and their current or future work roles. Participants observed that their own writing and research skills improved.

Maura stated that her communication skills improved:

I gained a lot...I think I have always been a really shy person and being a tutor has helped me kind of communicate with people better...one-on-one or in

groups. I feel like it [being a tutor] also helped my own school work because I'm constantly thinking about these things. You start applying it to your own papers.

When she first took on the role of research mentor, Reba felt nervous: "I was really honored to be asked...going through the training and having people look up to me, it was really nice but also scary. What if I didn't know, what if I said the wrong things?" She also believed the experience affected her ability to work with others. "Overall, I think it helped me really take leadership roles and be willing to train people and work with people and have more patience."

Participants explained how their experiences as a research mentor were relevant in their work life now. Oscar described a time during graduate school when he was working at a library service desk helping a student with a class assignment:

I saved my old projects [so] I pulled [one] up and showed them how I structured [it]. I remember at one point thinking specifically, I am modeling. I am showing somebody how I approach the project to help them try to get past their block.

Carlos noted that the experience made him "more appreciative of the learning process. I'm always considering different strategies on how I can learn." He described applying some of the strategies he learned to his current work experience. One strategy he used was to document his learning:

I'm testing out something and I'll try a lot of different methods... [when] I finally have a breakthrough, then I spend time on a note pad. I will write out my notes...voicing my learning on paper, [then] later, go back to it to try to

enhance my understanding.

Another strategy Carlos applied was to use mentors to assist him in learning new concepts. “Before I was a tutor, I never went to a tutor. I think I thought there was some kind of stigma...is it because I need a lot of help?” Then he observed that some of his tutees “were writing very well...and I kind of looked inward and thought...okay. I need to reevaluate that whole approach...and now I have a mentor...to help me learn the correct methods...or just talk to me about design and development.”

Other participants identified how their research mentor experiences prepared them for their future career. Malia is studying to work in the medical profession and she observed that her experience “helped me to develop an ability to talk with somebody one-on-one and to identify problems...being able to practice that in a non-clinical setting gave me good experience.” She also noted that understanding how “to find out what students’ learning abilities are and how they perceive information...helped me to communicate with students...to be clear and put myself at their level.”

Phoebe saw connections between her experience as a research mentor and her future profession:

It [the experience] was definitely helpful to me and it definitely helped me to figure out what I want to do in my career, which is awesome. I know I want to be in higher education and I know I want to be involved with students individually in the writing process in some way.

Participants spoke about changes in their own writing and research abilities. Carrie observed that she applied the skills she developed as a research mentor to her own process and became a better researcher. “I think it made me smarter. You don’t realize that there are so many different ways for you to improve. I learned the tools...and used them for my own research. Research became that much faster, easier, and fun.” She explained further:

Because we learned that the research and the writing go together, I stopped just spending three hours doing research without thinking about where any of the research was going. So I started doing what I told my students [to do], doing some research and figuring how it fits in...and I became much more efficient at the research process.

Rosalind remarked about the way her experiences changed her writing skills. “I’m much more of a critical thinker than I was before. I really feel I’m a stronger writer as well. I know how to look at my ideas, not just my grammar.” She continued, “I’m just more confident overall. Being a tutor was my favorite job...the interaction of it, being able to sit with somebody and learn with them and learn from them...watch them develop and progress, and sometimes watch yourself, too.”

Rosalind was a research mentor in the First Year Writing course for four semesters. She noted, “I basically took that course four times, I didn’t just write one paper each semester, I wrote fifteen papers each semester...constantly being in that, it really impacted my own writing and the way I approached it.”

At the beginning of the interview, Phoebe said “I don’t want to say I found myself here, [but] I feel like I blossomed here.” As she reflected on the question of impact, Phoebe stated:

I couldn’t say enough good things about the program. I feel like I really found my niche, helping students, especially in writing. The research component was absolutely valuable...and it helped me so much in my own writing. It helped me become a better writer being able to see how other people incorporated research into their writing. I was able to mold my own writing, to say this worked with this person, I’ll try that next time with mine...discovering new databases, I was able to do that as well. The list goes on.”

Additional comments.

As the interview came to a close, participants were invited to add any additional comments. Rosalind spoke about her experience at a writing conference. “We were the only people there who understood that research was part of the writing process.” She explained that sample papers were reviewed by conference attendees who were asked to identify the problems in the papers. She remarked:

Nobody looked at the source. Everybody looked at the grammar and were editing instead of looking at the ideas. The [research mentor] program is unique in the way it looks at the holistic picture of the process. After the conference, I really appreciated being a writing and research tutor so much more and what I gained from it.

Maura suggested adding more hands-on experiences to the Tutor Development course because she noted: “I was nervous at first giving presentations in front of

everybody, but I actually did start to enjoy it.” Reba described how she felt working as a professional tutor in another college setting. “I felt really competent which is great because coming into a new database system I wasn’t sure if I would be able to direct (students) or have any suggestions.” She added, “I did feel confident enough to relay information to [those] looking for help...that was really nice.” Oscar commented on his tutees:

I could see the progression that they [made]. I would say that would be the most valuable thing. It is hard to articulate, but it gave me a view of the structure of learning that I didn’t have before and helped me to be able to teach other people to think in ways that I wouldn’t have [done] otherwise.

Looking back on his experiences, Carlos admitted he wondered “am I good enough for this? Will my experience be helpful to students?” He concluded:

I might not have been able to change a person’s D paper into an A [but] maybe they will carry forth small bits and it will help them going forward....you won’t fix everything, but hopefully it’s those small bits that you can impress upon a person that makes them feel more confident.

Carrie expressed similar concerns. “In some way we all feel like frauds because...when students hear I’m a research mentor, they think you know anything and everything about research...you sometimes just feel like...wow, maybe I shouldn’t be doing this because I really don’t know.”

Phoebe saw things differently:

I think the most valuable part of this program is that I was a student as well.

We were students in the class and we learned to help other students, and I think

that type of relationship is so important to have when you are in college. It was helpful to me as the mentor, but it was also helpful to the students to have somebody that maybe wasn't in the faculty sphere...somebody closer to them that they could talk to and relate to on more of a friendship basis. Being able to talk to your peers about writing and having somebody who knows a little bit more than you about that process is definitely helpful. It is helpful to me, too. I used the tutors as well. I found it extremely important in my own writing to get feedback from somebody that knows my level of writing and knows the same type of expectations that instructors have and is able to work with me on my insecurities about writing. I think it is easier for a student to do that sometimes because they understand the position of a student. They know what the person is going through and what the person needs to be successful.

Summary of interview findings.

All participants experienced formal or informal peer tutoring opportunities prior to enrolling in UNH Manchester. The previous mentoring experiences resulted from participation in school sports or community organizations. In the First Year Writing classroom, participants interacted with students in three capacities: 1) sharing personal examples of writing and research experiences; 2) assisting with one-on-one or small group in-class activities focused on writing fundamentals or research techniques; and 3) conducting short workshops on various components of the research process. Participants observed that through these cooperative learning environments they experienced increased confidence working with others and improved their own writing and research skills.

Participants structured one-on-one tutorial sessions to meet the needs of each individual tutee whether brainstorming a research topic, crafting search strategies, finding and evaluating sources, or addressing organizational issues in the research paper. Participants utilized a variety of instructional strategies to scaffold learning such as read-aloud techniques, outlining, mind maps, and web diagrams. Participants reported that the exchanges with tutees were both positive and rewarding. Participants observed that the peer dyads contributed to a cooperative learning environment in which both tutors and tutees were able to increase knowledge.

Not all participants took part in the delivery of information literacy instruction, but those who did worked closely with an instruction librarian to plan and deliver the sessions. During these sessions, research mentors modeled good research practice, provided support during hand-on activities, and offered peer empathy for the research process based on firsthand experience.

Through the Tutor Development course, participants explored learning theories and instructional strategies that they employed in the peer dyadic relationships to guide tutees in the research process. Participants internalized this knowledge by applying it to their own writing and research process thereby demonstrating the reciprocal learning capacity of dyadic relationships. In-class exercises, such as workshopping sample papers, role-playing, mock tutorials, and mock research projects, created a collective cooperative learning environment that foreshadowed the reciprocity of the dyadic relationship.

Survey

This study utilized a survey adapted from the *Survey Regarding Satisfaction, Learning and Development of Peer Mentors in Higher Education* (Posa, 2011) to collect research mentor perceptions about the effect of their participation in the Research Mentor Program. The modified survey (Appendix E) contains nine categories of questions related to learning and development. Those categories are: 1) academic success; 2) collaboration; 3) communication skills; 4) decision-making and problem-solving; 5) diversity; 6) information literacy skills; 7) intrinsic benefits; 8) reflection; and 9) student engagement. Frequency levels of agreement were calculated for the survey items in each category. Participants were asked to respond to survey questions based on their experiences since becoming a research mentor at the University of New Hampshire Manchester (UNHM).

Academic success.

Reflecting on their experiences as research mentors, seven participants agreed that they adapted their study skills to be more academically successful and that they were more effective in their time management and organizational skills. Two participants agreed that their grade point average increased, but five participants neither agreed nor disagreed that their grade point average increased. Seven participants agreed they utilized university resources more often as a result of their research mentor experiences (See Table 5).

Table – 5 Academic Success

	Academic Success	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q22	Adapted Study Skills	5	2	1	0	0
Q29	Time Mgmt. & Organizational Skills	3	4	0	1	0
Q34	Grade Point Average Increased	1	1	5	1	0
Q39	Utilized University Resources	6	1	1	0	0

Collaboration.

Reflecting on their experiences as research mentors, all participants agreed they work collaboratively with colleagues to discuss solutions to problems and that they valued working cooperatively to achieve a common goal. Only two participants agreed that they prefer working alone when making decisions and solving problems (See Table 6).

Table – 6 Collaboration

	Collaboration	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q12	Collaborate with Colleagues	6	2	0	0	0
Q14	Value Working Cooperatively	4	4	0	0	0
Q27	Prefer Working Alone	0	2	5	1	0

Communication skills.

Reflecting on their experiences as research mentors, all participants agreed they were better listeners and that they improved their interpersonal communication skills. Seven participants agreed they were more confident speaking in public (See Table 7).

Table – 7 Communication Skills

	Communication Skills	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q18	Better Listener	6	2	0	0	0
Q21	Interpersonal Communication	7	1	0	0	0
Q23	Confidence Public Speaking	3	4	1	0	0

Decision-making and problem-solving.

Reflecting on their experiences as research mentors, all participants agreed that they were more able to help others in their decision-making and problem-solving processes. All participants also agreed that their own decision-making abilities improved. Six participants agreed they were more confident in their ability to solve problems (See Table 8).

Table – 8 Decision-making and Problem-solving

	Decision-making & Problem-solving	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q17	Assist Others with DM & PS	4	4	0	0	0
Q26	Improved Personal DB & PS	3	5	0	0	0
Q37	Confident Problem Solving	5	1	2	0	0

Diversity.

Reflecting on their experiences as research mentors, all participants agreed they understood the differences among their peers and adapted their mentoring approach to meet each student's needs. All participants strongly agreed that they had the opportunity to meet and work with a diverse group of people (See Table 9).

Table – 9 Diversity

	Diversity	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q11	Understand Differences	5	3	0	0	0
Q16	Opportunity to Meet Diverse People	8	0	0	0	0

Information literacy skills.

Reflecting on their experiences as research mentors, all participants agreed they use Boolean logic more effectively when searching library databases and are more confident in using the library databases for their own research. All participants also agreed they are better able to evaluate sources and are more confident evaluating sources for their research projects. All participants agreed their ability to develop a focused research topic improved (See Table 10).

Table – 10 Information Literacy Skills

	Information Literacy Skills	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q13	Boolean Logic Use	6	2	0	0	0
Q15	Confident with Databases	6	2	0	0	0
Q20	Better Able to Evaluate Sources	6	2	0	0	0
Q24	Confident Evaluating Sources	6	2	0	0	0
Q31	Avoid Heavy Research Courses	0	0	2	1	5
Q38	Develop Focused Topic Improved	4	4	0	0	0

Intrinsic benefit.

Reflecting on their experiences as research mentors, all participants agreed they were more confident in their abilities to lead others. Seven participants agreed their self-confidence increased. All participants strongly agreed that being a research mentor enhanced their college experience and disagreed that being a research mentor had no effect on their own learning and development (See Table 11).

Table – 11 Intrinsic Benefit

	Intrinsic Benefit	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q30	Confident Leading Others	4	4	0	0	0
Q32	Increased Self-Confidence	6	1	1	0	0
Q35	Research Mentor Enhanced College Experience	8	0	0	0	0
Q40	Research Mentor No Effect on Learning & Development	0	0	0	1	7

Reflection.

Reflecting on their experiences as research mentors, all participants agreed they were more aware of how they learn and study. Seven participants agreed they were more aware of their own skills and abilities, i.e., communication skills (See Table 12).

Table – 12 Reflection

	Reflection	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q19	Awareness of Learning & Studying	6	2	0	0	0
Q25	Awareness of Skills & Abilities	4	3	0	1	0

Student engagement.

Reflecting on their experiences as research mentors, four participants agreed they participated more often in college activities, events and organizations since becoming a research mentor. All participants agreed they were more comfortable interacting with professors. Four participants agreed they were more comfortable asking questions in class; one participant skipped this question (See Table 13).

Table – 13 Student Engagement

	Student Engagement	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q28	Increased Campus Participation	2	2	3	1	0
Q33	Comfortable Interacting with Professors	5	3	0	0	0
Q36	Comfortable Asking Questions in Class	2	2	2	1	0

Summary of survey findings.

Based on their experiences since becoming a research mentor, survey responses indicated that participants agreed they:

- Were more academically successful by adapting study skills, time management, and organizational skills.
- Valued working collaboratively to achieve a common goal.
- Improved their interpersonal communication skills, were better listeners, and more-confident speaking in public.
- Were better able to help others with decision-making and problem-solving as well as improved their own decision-making and problem-solving skills.

- Had the opportunity to work with diverse people, understood the differences among their peers, and adapted their tutoring approaches to meet each tutee's needs.
- Strengthened their information literacy skills, used Boolean logic more effectively, were better able to evaluate sources, had improved their ability to develop a focused research topic, and were more confident using databases and evaluating sources.
- Increased their self-confidence and were more confident in their ability to lead others.
- Were more aware of how they learned and studied as well as more aware of their own abilities and skills.
- Were more comfortable when interacting with faculty.
- Believed that being a research mentor enhanced their college experience.
- Disagreed that being a research mentor had no effect on their own learning and development.

Document Reviews

Interview transcripts.

Within one week of the interview, a copy of their interview transcript was sent to each participant with a request to review the transcript and provide appropriate clarifying or supplementing comments. This process, known as member-checking, is used to verify accuracy and serves as a means of increasing validity in a qualitative study (Stake, 1995).

All participants reviewed their individual transcripts and confirmed it to be accurately reflective of the interview exchange. Two participants offered clarifying information. Oscar submitted the corrected information for the two items that were inaudible in the transcript: a course number and the author of a novel used in the First Year Writing class. Carlos' edits were limited to providing the words that were inaudible to the transcriber, and he also included supplemental information to clarify his statement about the underpreparedness of his tutees:

One note about a point I made numerous times about the 301 [developmental] students being a "mixed bag." If I would reconsider that word usage, there could have been a number of reasons for their preparation for a college writing course: the strength of the high school or middle school curriculum, possible learning disabilities. Discussing brightness would probably not be my first choice of categorizing them as students. My problem is probably I didn't dive into what their learning past was so that I could help them achieve.

Tutor Development course syllabi.

Marshall and Rossman (1999) suggested document review serves to illuminate context or historical perspective. The eight participants reported the semester and year in which they completed the tutor development course and the researcher obtained a copy of the corresponding semester's syllabus. Two participants completed the course in the same semester; therefore, only seven syllabi were examined. The seven syllabi were reviewed to identify the course goals and objectives determined by the instructors. In this study, the syllabi were reviewed to establish the context of the participants' perspectives about how the course prepared them to take on the role of

research mentor. Course goals and objectives were compared to the participants' interview responses to identify supporting evidence and corroborate findings (Glesne, 2006).

A review of the syllabi for the Tutor Development courses offered between spring semester 2006 and spring semester 2009 contained a common set of course goals. These goals included:

1. To teach tutors a variety of instructional strategies in reading, writing, and library research.
2. To familiarize tutors with a broad repertoire of strategies and approaches to writing and library research.
3. To help tutors promote Higher Order Thinking skills (HOT) in their tutees through strategic questioning.
4. To develop thinking about ethical issues in writing, such as how to deal with plagiarism and how much help is too much help.
5. To promote self-awareness and reflective practice.
6. To apply adult learning theory and theories of adult development to the development of reading, writing, and research processes.
7. To apply tutors' understanding of differences in learning styles and cultural values to the tutoring of writing and information literacy.
8. To apply knowledge of mental and physical disabilities to tutoring students with disabilities in reading, writing, and library research.
9. To encourage a developmental approach to students' learning and foster an ability to adapt to students' needs ("read & flex").

10. To develop an understanding of the role of emotions, perceptions, and beliefs in the learning experience.
11. To develop skills for facilitating small writing groups and classroom presentations in information literacy.
12. To develop and practice communication skills, especially listening actively & reflectively, and being a transparent reader.
13. To develop library skills, learn techniques for conducting a reference interview, and provide practice in facilitating bibliographic instruction.
14. To promote tutors' skills as critical thinkers.
15. To create a supportive, yet challenging, learning environment to practice collaborative learning.

In fall semester 2009, the goals for the tutor development class were slightly adapted. The thirteenth goal – to develop library skills, learn techniques for conducting a reference interview, and provide practice in facilitating bibliographic instruction – was replaced by the following two goals: 1) To help tutors identify institutional resources, particularly those of the library, and to learn how to use those resources; and 2) To teach tutors information literacy skills and train them to assist students with library research.

The topics and activities for the weekly class sessions included a broad range of instruction, theoretical discussion, demonstration of resources, and application of these concepts to tutoring situations. The syllabi did not provide a complete listing of the readings assigned that corresponded to the weekly topics and activities; therefore, this information was not available for review.

Table – 14 Topics & Activities 2006 - 2009

Topics and Activities	Sp 2006	Sp 2008	Fa 2008	Sp 2009	Fa 2009
Discuss research mentor program Demonstrate reference materials, databases, and catalog	X	X	X	X	X
Invention strategies for writing and research Workshop sample papers applying strategies	X	X	X	X	X
Conducting the reference interview Adapting tutoring for different learning styles	X	X	X	X	X
Setting a goal for work-shopping a student's paper Workshop a paper	X	X	X	X	
Understanding the role (s) of writing tutor & collaborative learning Examine your own writing process and workshop a paper					X
Presentation of your library research experience				X	X
Practicing the transparent reader approach Integrating both direct & non-direct tutoring strategies	X	X	X	X	X
Discussion of ethics in writing & research. How much help is too much help?	X	X	X	X	X
Techniques for working with students with learning disabilities Workshop sample paper	X	X	X	X	
Working with ESL students' papers and library research Discussion of cultural differences	X	X	X	X	X
Evaluation of the WEB	X	X	X	X	
Encouraging students to analyze, not summarize					X
"The Writing Process of College Students" workshop			X	X	X
Applying Bloom's Taxonomy to writing & library tutorials Develop critical thinking & apply developmental levels	X	X	X	X	X
Providing feedback – commenting on papers			X	X	X
Work-shopping paper's using the Mullen's approach				X	X
BI demonstration by experienced research mentor				X	X
BI presentations Facilitating a group	X	X	X	X	X
Workshop sample papers	X	X	X		
Evaluation of training		X		X	X

Table 14 identifies the topics and activities offered between spring semester 2006 and fall semester 2009.

Beginning with fall semester 2011, a leadership change in the directorship of the Center for Academic Excellence (CAE) resulted in adaptation of the course syllabus and activities. Under the new director the course objectives were collapsed to

nine items, but these nine objectives incorporated all sixteen of the goals articulated in the earlier semesters. The topics and activities for the weekly class sessions were revised designating additional weeks for practice tutoring. The topics and activities are found on Table 15 below.

Table – 15 Topics & Activities 2011 - 2012

Topics and Activities	Fa 2011	Sp 2012
History of Writing Centers Understanding the tutoring process	X	X
Introduction to the research mentor program Beginning the research process	X	X
Ethics/What if situations	X	
Ethics and Codes of Conduct		X
Direct & indirect tutoring	X	X
Continuing the research process: catalog and databases	X	X
Presentation of your library research experience Discussion of web evaluation	X	X
Working with different types of sources and genres	X	X
Disabilities	X	X
ESOL writing and research	X	X
Identity (race, class, gender, age, sexuality) in the writing center and library	X	
Workshop sample papers (library)	X	X
Practice tutoring (writing & library)	X	X
Reflecting	X	X

The syllabi served as secondary data and complemented the primary data provided by the participants. The interviews and survey results were contextualized through an examination of the goals and objectives outlined in the tutor development course syllabi. Participants described eight examples connecting the course goals and activities to their experiences as research mentors.

Participants described using instructional strategies to scaffold learning when working with tutees. Reba said she worked with students to “outline [their papers]...and [students would] say what ...this paragraph mean[s] and the next one.” Rosalind identified several strategies she used, such as “mind maps, word webs,

outlines... [and] sometimes doodles.” Phoebe explained that she “asked them (students) to summarize what each paragraph talked about and then [she] would write it down for them so they could see where their argument was going.” Malia mentioned using bubble diagrams and web diagrams and also recalled “teaching them (students) how to be more open-minded, so not funneling in on the research but [to be] open to what it does show.”

Participants spoke about helping students to take control of their own learning by using direct and non-direct tutoring methods. Rosalind described her method for assisting students with library research:

I would sit on one side and the student on the other side. I would get the student to do most of the driving... You have to give them ownership, you have to let them drive, [and] you have to be as indirect as you can.”

Maura recalled that “it wasn’t so much me telling them; oh you should do this, as kind of going through the process together.” Carrie stated that when students needed to narrow a topic, they would spend the tutorial “brainstorming, which would consist of me asking question after question, and I would write down the answers so they had it for later.” Malia noted that some professors required students to meet with research mentors and said that “sometimes I felt like I had to direct more when...I could tell they didn’t want to be there.”

Participants expressed their perceptions of their self-awareness and reflective practice through their interview responses. Maura remarked that being a tutor “helped my own school work because I’m constantly thinking about these things [and] you start applying it to your own papers.” When Rosalind thought about her experience as

a research mentor, she said “I guess I’m just more confident overall. Being a tutor was my favorite job.” Several survey questions corresponded to participants’ perceptions of self-awareness and reflective practice. Table 16 provides the participants’ responses to each level of agreement with survey questions that focused on awareness and reflective practice.

Table – 16 Awareness & Reflective Practice

	Survey Question	Strongly Agree	Somewhat Agree	Neither Agree or Disagree	Somewhat Disagree	Strongly Disagree
Q32	I believe my self-confidence has increased.	6	1	1	0	0
Q19	I am more aware of how I learn and study.	6	2	0	0	0
Q25	I am more aware of my skills and abilities (e.g. communication & organizational skills)	4	3	0	1	0
Q22	I adapted my study skills to be more academically successful.	5	2	1	0	0
Q29	I am more effective in my time management & organizational skills.	3	4	0	1	0

Participants spoke about discussing learning styles and theories in the tutor development class. They also recalled applying the learning style concepts and adapting tutoring styles to meet the tutee’s needs. Carlos remembered “different strategies [to use]...as part of the grounding of what a tutor is, for example scaffolding.” Reba used her knowledge of learning styles to help when “students [would] get frustrated. It was like, let’s take a step back and talk about learning styles and how you learn best and let’s try to do it the way you want to do it.” Oscar

remarked that discussing “learning strategies... [and] taking all the tests to figure what type of learners we were and seeing the differences among the class [was] eye-opening.” All participants responded to a survey question that asked if they adapted their tutoring style to meet each student’s individual strengths and weaknesses. All participants agreed that they did adapt their approach when working with diverse students.

Participants explained their roles in facilitating small group exercises and classroom presentations. Reba recalled “working with small groups just on sentence structure and organization.” Carrie conducted in-class sessions where she “got to spend time presenting how to do research starting [with] narrowing down the topic and thinking of a research question, to how to use the databases, [and] how to use the internet responsibly as a researcher.” Maura developed a workshop to teach APA citation basics. She described how she implemented her idea:

What I did was I took flashcards and I put different parts of a citation on each flashcard. I broke the class up into two teams. They both had the same citations and whoever could put it together the fastest would get a point.

Participants responded to survey questions that asked for their perceptions of their communication skills abilities. All participants agreed they were better listeners. All participants reported that their interpersonal communication skills improved. Seven participants agreed they were more confident speaking in public. Maura offered this personal perspective, “I think I have always been a really shy person and being a tutor has helped me kind of communicate with people better...one-on-one or in groups.”

Participants' descriptions of developing information literacy skills are found in various interview responses. Carrie noted that with "each student that I got to work with, I...[felt] like I learned a lot too...not just the content of the research, but more in terms of better research methods." She added, "I felt that working with other students made me better at my own research...I was able to take the tools that I use...to work with other students...and apply them to myself." Several survey questions corresponded to participants' development of information literacy skills. Table 17 provides the participants' responses to each level of agreement with survey questions that focused on information literacy skill development.

Table – 17 Information Literacy Skills

	Survey Question	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Q13	I use Boolean logic more effectively to construct search strategies when using library databases.	6	2	0	0	0
Q20	I am better able to evaluate sources for use in my research projects.	6	2	0	0	0
Q38	My ability to develop a focused research topic has improved.	4	4	0	0	0

Participants responded to two survey questions that focused on critical thinking attributes. All participants agreed that their decision-making and problem-solving skills improved and six participants agreed they were more confident in their abilities to solve problems. Rosalind summed up her experience by declaring "I'm much more of a critical thinker than I was before. I really feel I'm a stronger writer as well. I know how to look at my ideas, not just my grammar."

Participants described the collaborative learning environment through interview question responses. Reba recalled an experience working with a First Year Writing instructor; “she was excellent...I learned a lot from her, so I was happy to help with the students learning as well.” Carrie noted “I just find each time you work with a different student, you open yourself up to new methods to use... [for] research.” She further admitted that once she started “doing what I told my students [to do], doing some research and figuring how it fits in...I became much more efficient at the research process.” Maura felt “it was most comfortable when it was more casual...[and] best for both of us when it’s a discussion...[and] we are both providing input and feedback...[on] ideas together.” Phoebe believed that working with students “made me feel like I definitely had a purpose in the classroom and that I was an essential piece to that learning environment.” Rosalind described the collaborative exchange as “being able to sit with somebody and learn with them and learn from them. You go through and watch them develop and progress, and sometimes [you] watch yourself too.”

Summary syllabi review findings.

The researcher determined that the following eight Tutor Development course objectives corresponded to the role of the research mentor as described in the participants’ interview and survey responses:

- Use of instructional strategies to scaffold learning.
- Use of direct and non-direct tutoring methods to allow students to take control of their own learning.
- Increased self-awareness and reflective practice.

- Application of learning theories and learning styles when working with tutees.
- Ability to facilitate small group exercises and classroom presentations.
- Strengthening of information literacy skills.
- Increased critical thinking skills
- Creation of supportive, collaborative learning environment.

Thematic Connections

The primary data collected through interviews and surveys offered a rich description of the everyday experiences of the research mentors. By examining the details in the participants' responses, it is possible to identify connections across the shared experience. Seidman (2006) suggested that through analyzing the thematic connections researchers make meaning of their research leading to a "deeper understanding and appreciation of the amazing intricacies and, yet, coherence of people's experiences" (p. 130).

In this study, the participants detailed the various aspects of their role as research mentors identifying the activities and interactions encountered in the dyadic relationship. Participants shared personal recollections, impressions, and attitudes as they conveyed meaning to their experiences. Upon examination of the primary data, interview and survey responses, three distinct thematic connections emerged that represent the effects of participation in the Research Mentor Program: 1) participants expressed uncertainty and self-doubt in their abilities to initially succeed as a research mentor; 2) participants acknowledged a perceived increase in learning and personal development; and 3) participants attributed increased learning and personal

development to the reciprocal learning environment engendered in the peer-to-peer dyads.

Table 18 – Evidence of Thematic Connections from Interview Responses

Expressed Concerns of Uncertainty and Self-doubt	Increased Learning and Personal Development	Attribution of Reciprocal Learning Environment
“It was really helpful to know the process but even if you don’t, the students are not really dependent on you if you don’t know the answer. You are not the end all, be all.”	“I guess I’m just more confident overall. I am much more of a critical thinker.”	“I think the point of being a peer mentor [is] you are close enough in age and what you are doing that you are going to be able to connect better.”
“After going through the training and having people look up to me, it was really nice, but also a little scary.”	“It gave me a lot of confidence in my abilities to interact with people, to get my own research done.”	“I learned a lot, so I was happy to help with the students learning as well.”
“What if I didn’t know, what if I said the wrong things?”	“I really feel I’m a stronger writer as well. I know how to look at my ideas, not just my grammar.”	“Each student that I got to work with, I feel like I learned a lot too.”
“My overarching thought was always am I good enough for this?”	“The research component was absolutely invaluable...it helped me so much in my own writing.”	“In a way I was able to take the tools that I use as a tutor to work with other students and learn to apply them to myself.”
“Will my experiences be helpful to students?”	“The program was valuable to help me be a better learner.”	“I think I gained a lot from the classroom, in the tutor class, but also in engaging one-on-one with students.”
“I think my first tutorial in the university setting was a little bit intimidating.”	“I think it helped me really take leadership roles.”	“Being a tutor, I feel like it also helps my own school work because...when you are talking about it with other people, you start to apply it to your own papers.”
“At first I was very nervous.”	“I think it made me smarter, at least a better researcher.”	“I remember myself being in their shoes...I know how tough it can be...[I wanted to] really relate to them as a peer”

The first theme appeared to contradict other data findings; yet it was because this theme seemed contradictory and inconsistent with the other themes that it was included in this discussion. As Seidman (2006) cautioned, to ignore the decisively different could be interpreted as researcher bias and could weaken the validity of the

study. The second two themes aligned with the researcher's goal to understand the experiences of the research mentors who participated in the Research Mentor Program to determine if the reciprocal learning environment created through the peer dyads impacted their knowledge and skills. Short excerpts of participants' perspectives are found in Table 18, followed by a closer examination of each theme in context of the interview and survey findings.

Expressed concerns of uncertainty and self-doubt.

Participants shared concerns about feelings of uncertainty and self-doubt in their ability to initially succeed as a research mentor. Interview responses described the nervousness and uncertainty that can be found in new experiences, while other responses expressed concerns about knowing when and where to refer students to professional staff. This theme contradicted other data findings but reflected participants' recollection of their experiences during their early semesters as research mentors.

Interview responses.

In response to interview questions that focused on the role of the research mentor and the everyday experiences associated with that role, participants expressed feelings of uncertainty and self-doubt about their ability to initially succeed in the role of research mentor (see table 18). Below are three additional examples that more fully expressed the effects of program participation from the participants' perspectives:

1. I had a few questions about citations, where to find the answers on certain things. One person came in with an engineering paper that they had to do. There were things they needed IEEE citations for, that was way out of my

element, but the tutor director was there and she was able to help me find a good resource to help us get documentation (Malia).

2. When it came to not having the answer, I wish I knew how to react better to that. Not knowing where to go with that, especially when they look to you for answers and you don't have them. It would be nice to know what do I say and where to direct them. For the research I knew to direct them to the librarians, they will know better than me (Reba).
3. I think that one of the things that we all feel...I did...we all feel a little bit like frauds because I think sometimes when students hear I'm a research mentor they think that you know anything and everything about research, where to go, how to find the information. It is something that you kind of struggle with when you are a student and you are like...I just don't know how we'll find this information. So you sometimes just feel like...wow...maybe I shouldn't be doing this because I really don't know. It is those times when you have to say maybe I don't know but let's see if a librarian knows. Let's see if somebody else knows. It becomes a really good learning opportunity for the students. Some of them, especially in the 301 classes or in the lower classes, and by lower I mean freshman level classes; they see you as an all-knowing figure because you are a tutor. You must know everything about everything and when they see you are struggling with where to go with information, sometimes you can lose face with them. They think oh well she is obviously not that smart. But I think the best outcome of that is to say I don't know, but we can find a way to get this information. It is kind of a feeling you get where

you feel bad because in a way you are supposed to be the research mentor, but in a way it is a good learning experience for the student to know there is somebody else that I can go to. I know other tutors said the same thing. You feel like a fraud because you don't know everything. You are not supposed to [but] you have a feeling that you should know (Carrie).

Survey responses.

There was no survey question focused on participants' perceptions of feelings of uncertainty and self-doubt about their ability to initially succeed in the role of the research mentor.

Increased learning and personal development.

Participants reported a perceived growth in academic ability and in personal development. Interview responses demonstrated that participants acknowledged their writing and research skills were improved. As a result of their role as a research mentor, these participants noted that they strengthened many personal development skills, such as increased confidence, communication, leadership and critical thinking. Supporting evidence for the increased academic success and personal development skills are found throughout the survey responses.

This finding aligns with the research found in the peer-tutoring literature. Several research studies (Annis, 1983; Bargh & Schul, 1980; Benware & Deci, 1986; Fantuzzo, Dimeff & Fox, 1989; Magolda & Rogers, 1987; Villareal, 2005) established evidence that the peer tutor dyad results in academic achievement gains, not only for the tutee, but also for the tutor. This finding appeared to confirm the underlying assumptions of the Research Mentor Program; peer tutoring relationships create

reciprocal learning environments whereby students learn from each other and peer-to-peer dyads support deep learning.

Interview responses.

In response to interview questions, participants provided examples of their perceived gains in academic and personal development skills (see Table 18). Below are three additional examples that more fully expressed the effects of program participation from the participants' perspectives:

1. I have gained a lot. I started tutoring my second semester here and I think I have always been a really shy person. Being a tutor has helped me kind of communicate with people ...better, one-on-one or in groups. I feel like it also helps my own school work because I'm constantly thinking about these things. In a paper you think about the thesis, organization, and when you are talking about it with other people, you start applying it to your own papers. I have always found that really helpful (Maura).
2. I think it helped me to develop an ability to talk with somebody one-on-one and to identify problems. For example, I'm in PA school now so I need to kind of figure out what people's problems or chief complaints are. Being able to practice that in a non-clinical setting gave me good experience for ways to talk with people about that. Whether it be observing somebody coming in, observing are they stressed, anxious, or tired. Kind of looking at them as a person and having them describe – giving them the opportunity to describe what they would like to see happen – gave me a way to interpret what they want to see happen and how they perceive that. It was helpful from a

professional standpoint, giving me that one-on-one time and the practice for that. The class helped too from a teaching perspective, how to find out what students' learning abilities are and how they perceive information, that type of thing. Before coming to PA school I was an athletic director for a small school. I also needed to be a PE teacher, and [this experience] helped me with learning how to communicate with students, albeit different age groups. Still, in a teaching capacity how to pass information, how to be clear and put myself at their level, that was helpful (Malia).

3. I really love working with people where they do research, even if it is something I personally wouldn't choose to do research on. I just find each time you work with a different student, you open yourself up to new methods to use, try to find new search terms, research. Each student that I got to work with, I feel like I learned a lot too, not just the content of the research, but more in terms of better research methods. I really enjoyed working with students in whatever stage of the research process that they were working on. I felt, this is probably selfish, I felt that working with other students made me better at my own research. I figured out how to kind of have those conversations with myself and evaluate my own draft. Where am I? What type of sources do I need to answer the questions? What am I missing in this? What types of questions do I ask myself, what questions do I need to answer and how to go about trying to find information or sources to answer those questions. So in a way, I was able to take the tools that I use as a tutor to work with other students and learn to apply them to myself (Carrie).

Survey responses.

Several survey questions focused on academic success and information literacy skills. Seven participants (88%) agreed that since becoming a research mentor they adapted their study skills to be more academically successful, are more effective in their time management and organizational skills, and that they utilized university resources (the CAE, academic advising, the library, etc.) more often. All participants agreed that as a research mentor they used Boolean logic more effectively to construct search strategies when using the library databases, were more confident using the library databases for research projects, were better able to evaluate sources for use in research projects, were more confident evaluating the sources found to complete research projects, and their ability to develop a focused research topic had improved.

Other survey questions focused on personal development skills. All participants agreed they were better listeners and that their interpersonal communication abilities improved as a result of participation in the program. Seven participants (88%) agreed they were more confident speaking in public. All participants agreed their decision-making and problem-solving skills improved and that they were better able to help others in their decision-making and problem-solving processes. Six participants (63%) agreed they were more confident in solving problems. Seven participants (88%) agreed their self-confidence increased since becoming a research mentor and all participants agreed they were more confident in their abilities to lead others.

Attribution of reciprocal learning environment.

Participants attributed the increase in their own academic and personal development skills to the peer-to-peer learning environment created through the tutoring dyads. Interview responses demonstrated that participants credited participation in the program with improving their writing and research skills. The personal recollections and impressions shared throughout the interviews demonstrated an awareness of the value of the peer relationship and the cooperative approach to learning. This finding aligns with research on the benefits to peer tutors participating in cooperative learning relationships. Griffin and Griffin (1997) reported that tutors experienced increased academic achievement due to the cooperative learning environment found in the peer tutor dyad. This finding further confirmed the program's underlying assumptions that peer tutoring relationships create reciprocal learning environments whereby students learn from each other and peer-to-peer dyads support deep learning.

Interview responses.

In response to interview questions, participants expressed their perspectives on the program's reciprocal learning environment and its impact on learning (see table 18). Below are three additional examples that more fully expressed the effects of program participation from the participants' perspectives:

1. I guess I am just more confident overall. I don't know. This is my favorite job, being a tutor, and the one I keep referring to and going back to, literally going back to sometimes. It is really interesting that I think the personability of it, the interaction of it, being able to sit with somebody and learn from them

and, learn with them. You go through and watch them develop and progress, and sometimes watch yourself, too. I sat through English 401 four times. I got to go through the process, go through the writing process, go through the research process, go through the analysis process constantly...it really impacted my own writing and the way I approached it. Assignments didn't necessarily become burdens; they became challenges (Rosalind).

2. Before I was a tutor, I never would see a mentor or never go to a tutor. I think before I always thought there was something kind of stigmatizing. Is this reflective on my abilities to go see a tutor because I need a lot of help? There was some very smart kids, students that came in, they were definitely juniors and seniors with some papers that, I was like wow, this is a rich discussion. They were writing it very well. I think for myself I would struggle with trying to write that, and they were doing very well. I'd think at certain points this is a very smart student, but he's seeking out a mentor. I think as I moved on from English 301 to History 401, I started to see there were some very bright kids and I kind of looked inward and thought okay. I need to reevaluate that whole approach. I should be seeking out more help on my own part and now with my front-end web development, I have a mentor that I seek out. I think [for me] the problem was with the word tutor. I think when I saw it more like mentorship or collaborative efforts [I was okay]...the word tutor is what held me back from seeking out help at the time and being worried about my own issues, my own anxiety about seeing somebody (Carlos).

3. I think the most valuable part of this program is that I was a student as well.

We were students in the class and we learned to help other students, and I think that type of relationship is so important to have when you are in college. It was helpful to me as the mentor in the research mentor position, but it was also helpful to the students to have somebody that maybe wasn't in the faculty sphere, somebody closer to them that they could talk to and relate to on more of a friendship-basis, maybe one step away from that. Being able to talk to your peers about writing and having somebody who knows a little bit more than you about that process is definitely helpful. It is helpful to me too. I used the tutors as well. I found it extremely important in my own writing to get feedback from somebody that knows my level of writing and knows the same type of expectations that instructors have, and is able to work with me in my insecurities about writing, to help me meet the expectations that I have and that my instructors have. I think it is easier for a student to do that sometimes because they understand the position of a student. They know what that person is going through and what that person needs to do to be successful (Phoebe).

Survey responses.

The survey questions that provided insight into participants' perspectives of the value of a peer-to-peer learning environment focused on collaboration and diversity. All participants agreed that since becoming a research mentor they valued working collaboratively in a team to achieve a common goal. All participants expressed agreement that they worked collaboratively with colleagues and peers to discuss solutions to problems. All participants agreed they had the opportunity to

meet and work with people different from themselves and agreed that they understood the differences among peers and adapted their mentoring approach to meet individual student's strengths and weaknesses.

The research question that guided this study was: what effect did participation in the Research Mentor Program have on the research mentors who participated. In response to that question, this study identified the following three effects of participation in the Research Mentor Program: 1) participants expressed uncertainty and self-doubt in their abilities to initially succeed as a research mentor 2) participants acknowledged a perceived increase in learning and personal development; and 3) participants attributed increased learning and personal development to the reciprocal learning environment engendered in the peer-to-peer dyads.

Summary

This chapter described the results obtained in a phenomenological study of participants' perspectives of the effect of their participation in the Research Mentor Program. Three qualitative methods were used to collect data: semistructured interviews; surveys; and document reviews. Study participants were described, interview responses to the guiding and follow-up questions were furnished, survey question results were tabulated, interview transcript documents and course syllabi documents were reviewed, and three thematic connections were identified. Chapter Five will present the study's conclusions and recommended suggestions for future research.

Chapter Five

Summary, Conclusions and Recommendations

Introduction

This chapter provides a summary overview, conclusions, and implications of a phenomenological study designed to explore the participation experiences of research mentors who served in the University of New Hampshire at Manchester (UNHM) Research Mentor Program. The findings from the data analysis are presented followed by a discussion of the conclusions drawn from the findings. Finally, limitations of the study are identified and recommendations for future research are proposed.

Summary Overview

The purpose of this study was to identify and describe the experiences of students who served as research mentors in the UNHM Research Mentor Program. The research question that guided this study was: What effect did participation in the Research Mentor Program have on the research mentors who participated? The researcher sought to understand this experience from the mentors' perspective to determine if the reciprocal learning environment created through peer dyads impacted knowledge and skills. Employing phenomenological methodology, this study sought to examine the lived experiences of the research mentors to gain an understanding of the meaning ascribed to those experiences in order to really know what's in it for them. The researcher incorporated interpretation of and reflection on those lived experiences to gain a rich awareness of the essence of participation in the Research Mentor Program.

A review of literature was conducted to uncover the extent of collaborative efforts between academic libraries and college writing centers. From shared space agreements to joint workshops, these collaborations led to mutually beneficial opportunities to enhance student support services. The review of literature examined the role of students in academic library reference and instruction services. These student experiences ranged from assisting with basic information inquiries to participating in the delivery of information literacy instruction. The review of literature explored the application of Vygotsky's sociocultural learning strategies in both higher education classrooms and academic libraries. Particular emphasis was focused on the zone of proximal development, a component of Vygotsky's cognitive development theory. The three areas of focus in the review of literature informed the development of the Research Mentor Program. This partnership between library and writing center employs students in an instructional role to support writing and research. To fulfill the role of research mentor, the students received training in sociocultural theories of a student-centered cooperative approach to learning.

The study was conducted at the University of New Hampshire Manchester and the participant sample was drawn from among the students who completed the Tutor Development course between fall semester 2004 and spring semester 2013 and served at least one semester as a research mentor. Fifty-eight eligible students were identified and invited to participate. Twenty students (a 38% response rate) replied to the invitation to participate; two students declined to participate.

A representative sample pool of eight students was determined based on the following criteria:

1. Replication of the gender distribution in the target population (25% male and 75% female),
2. A variety of students who completed the Tutor Development course in different semesters,
3. A mix of freshman and transfer admit status, and
4. A mix of students who completed First Year Writing at UNHM and those who completed that course prior to admission at UNHM.

The qualitative data collection methods utilized in this study included semistructured interviews, a survey adapted from the *Survey Regarding Satisfaction, Learning and Development of Peer Mentors in Higher Education* (Posa, 2011), and document reviews of interview transcripts and tutor development course syllabi.

Findings

Summary of interview findings.

All participants experienced formal or informal peer tutoring opportunities prior to enrolling in UNH Manchester. The previous mentoring experiences resulted from participation in school sports or community organizations. In the First Year Writing classroom, participants interacted with students in three capacities: 1) sharing personal examples of writing and research experiences; 2) assisting with one-on-one or small group in-class activities focused on writing fundamentals or research techniques; and 3) conducting short workshops on various components of the research process. Participants observed that through these cooperative learning environments

they experienced increased confidence working with others and improved their own writing and research skills.

Participants structured one-on-one tutorial sessions to meet the needs of each individual tutee whether brainstorming a research topic, crafting search strategies, finding and evaluating sources, or addressing organizational issues in the research paper. Participants utilized a variety of instructional strategies to scaffold learning such as read-aloud techniques, outlining, mind maps, and web diagrams. Participants reported that the exchanges with tutees were both positive and rewarding. Participants observed that the peer dyads contributed to a cooperative learning environment in which both tutors and tutees were able to increase knowledge.

Not all participants took part in the delivery of information literacy instruction, but those who did worked closely with an instruction librarian to plan and deliver the sessions. During these sessions, research mentors modeled good research practice, provided support during hand-on activities, and offered peer empathy for the research process based on firsthand experience.

Through the Tutor Development course, participants explored learning theories and instructional strategies that they employed in the peer dyadic relationships to guide tutees in the research process. Participants internalized this knowledge by applying it to their own writing and research process thereby demonstrating the reciprocal learning capacity of dyadic relationships. In-class exercises, such as workshopping sample papers, role-playing, mock tutorials, and mock research projects, created a collective cooperative learning environment that foreshadowed the reciprocity of the dyadic relationship.

Summary of survey findings.

Based on their experiences since becoming a research mentor, survey responses indicated that participants agreed they:

- Were more academically successful by adapting study skills, time management, and organizational skills.
- Valued working collaboratively to achieve a common goal.
- Improved their interpersonal communication skills, were better listeners, and more-confident speaking in public.
- Were better able to help others with decision-making and problem-solving as well as improved their own decision-making and problem-solving skills.
- Had the opportunity to work with diverse people, understood the differences among their peers, and adapted their tutoring approaches to meet each tutee's needs.
- Strengthened their information literacy skills, used Boolean logic more effectively, were better able to evaluate sources, had improved their ability to develop a focused research topic, and were more confident using databases and evaluating sources.
- Increased their self-confidence and were more confident in their ability to lead others.
- Were more aware of how they learned and studied as well as more aware of their own abilities and skills.
- Were more comfortable when interacting with faculty.
- Believed that being a research mentor enhanced their college experience.

- Disagreed that being a research mentor had no effect on their own learning and development.

Summary syllabi review findings.

The researcher determined that the following eight Tutor Development course objectives corresponded to the role of the research mentor as self-reported perceptions in the participants' interview and survey responses:

- Use of instructional strategies to scaffold learning.
- Use of direct and non-direct tutoring methods to allow students to take control of their own learning.
- Increased self-awareness and reflective practice.
- Application of learning theories and learning styles when working with tutees.
- Ability to facilitate small group exercises and classroom presentations.
- Strengthening of information literacy skills.
- Increased critical thinking skills
- Creation of supportive, collaborative learning environment.

Thematic Connections

Upon examination of the primary data, interview and survey responses, three distinct thematic connections emerged that identify the effects of participation in the Research Mentor Program: 1) participants expressed uncertainty and self-doubt in their abilities to initially succeed as a research mentor; 2) participants acknowledged a perceived increase in learning and personal development; and 3) participants attributed increased learning and personal development to the reciprocal learning environment engendered in the peer-to-peer dyads. The first theme appeared to contradict other two findings;

and reflected a temporary effect participants experienced early in the program. The second two themes reflected the long-term effects of participation and acknowledged that the reciprocal learning environment created through the peer dyads impacted their knowledge and skills.

Conclusions

This study appeared to confirm that reciprocal learning environments were created through the peer-to-peer dyads established between the research mentors and tutees and through the Tutor Development course cohort relationships. The effects of participation in the Research Mentor Program for the participating mentors were advanced academic knowledge and personal development which was attributable to the cooperative learning opportunities engendered in the peer-to-peer dyadic relationships. The concept of learning reciprocity has been extensively researched (Annis, 1983; Fantuzzo, Dimeff & Fox, 1989; Fantuzzo, King & Heller, 1992; Foster & Rotoloni, 2005; Griffin & Griffin, 1997; Riggio, Fantuzzo, Connelly & Dimeff, 1991). These studies demonstrated positive effects for both participants in the dyadic relationship.

All participants perceived an increase in their personal development and academic knowledge, specifically noting improvement in writing and research skills. Earlier studies (Annis, 1983; Bargh & Schul, 1980) demonstrated that tutors gained increased academic achievement through participation in peer tutoring relationships. Topping (1996) suggested that the gains achieved result from the process of preparing to teach inherent in the tutor role. Participants in this study identified examples of reviewing strategies for use in the tutorials that they regularly applied to their own

learning. In modeling good research and writing practices, the research mentors internalized these skills and advanced knowledge.

Participants attributed the growth in their academic knowledge and personal development to the reciprocal learning environments they experienced through the program. The effects of collaborative learning for advancing tutors' knowledge have been examined by scholars. Topping (1996) offered an extensive typology and review of the peer tutoring literature noting that some evidence of cognitive benefit for tutors existed while suggesting the need for further research. Recent scholarship (Conrady, 2007; Fallon, 2010; Griffin & Griffin, 1997; Langor, 2000; Nelson, 1995/96; Pobywajlo, 2004; Posa, 2011) confirmed that cooperative learning environments, such as the tutoring dyad, impacted the tutors' cognitive development. Working collaboratively with tutees and with each other, research mentors were exposed to new strategies and ideas that they utilized to improve their own research process.

Participants expressed uncertainty and self-doubt about their ability to initially succeed in the role of research mentor. This finding appeared at odds with the data supporting increased confidence and interpersonal communication skills acknowledged by the participants, yet it parallels the results noted by Pobywajlo (2004) that "tutoring is characterized by uncertainty and instability" suggesting that "some uncertainty was due to tutors' lack of practice with specific types of problems and [with] applying the tutoring strategies they were learning" (pp.231-232). She recommended adapting the tutor training curriculum to include additional time for practicing strategies to lessen anxiety and increase confidence. Participants in this study recommended a similar approach; suggesting more hands-on opportunities in the

Tutor Development class to practice potential tutee interactions and a clearer path for assistance and support when confronted with a question they felt underqualified to answer.

Limitations

Awareness of the potential limitations strengthens the trustworthiness of the study. As Glesne (2006) remarked, the researcher can only “do the best that [she] can under certain circumstances” (p.169). This study contained several limitations: self-reported data collection; small sample size; generalizability; and researcher bias. Interview and survey methods required participants to self-report perceptions, attitudes, and activities. Participants relied on memory to recall and articulate descriptions. Some participants were several years removed from actively serving in the research mentor role and expressed difficulty remembering details of their experiences.

A more experienced interviewer might have drawn greater depth from the participants’ interview responses through additional follow-up questions. Due to the researcher’s role within the Research Mentor Program, probing questions that might have elicited further information were avoided as they might be construed as directing responses toward desired outcomes thereby invalidating the study. Survey response rates were high across all categories which could be attributed to participants offering positive perceptions of their own abilities rather than an accurate reflection of increased learning. The high scores could also reflect a desire on the part of participants to help the study achieve a positive outcome. The survey and interviews relied on retrospective perceptions of the research mentor experience; there was no

pre-participation baseline against which to measure change. Survey results might have yielded richer data by adapting some questions to require participants to rate behavior frequency and not just belief agreement.

Creswell (1998) recommends a sample size of three to ten participants for phenomenological research. Although the sample size of eight participants was within the recommended range, the small number of participants may not reflect the experiences of all research mentors who participated in the program. The study's sample was made up of individuals who self-selected to participate, so although specific criteria was used to determine the final pool it is likely that participants who held the program in high regard were motivated to volunteer for the study.

This research study was conducted at one specific location, the University of New Hampshire Manchester, and for one specific program, the Research Mentor Program. The goal of qualitative research is to "gain deeper understanding of a phenomenon under scrutiny" (Hek & Moule, 2006, p. 108) and not establish a truth generalizable to the greater population. Study findings of increased learning and personal development skills align with the findings in recent research studies (Conrady, 2007; Harmon, 2006; Posa, 2011); however, these results may not apply to other programs in other locations.

The researcher's previous connection to the Research Mentor Program required an awareness of the potential for bias. It was critical for the researcher to refrain from asking leading questions that might unduly influence the participants' responses. The data analysis approach involved recognition of the researcher's previous involvement in the development and evaluation of the program. By

consistently and consciously striving to suspend any preconceived ideas, the researcher was able to allow each participant to describe their unique experience as a research mentor and extract the shared connections to identify the effects of participation in the program.

Implications

The findings of this study will be shared with the Tutor Development course instructors with a suggestion to reflect on how to mitigate the feelings of uncertainty and self-doubt expressed by the participants in this study. Recently the course curriculum was adapted to include additional practice tutoring opportunities and several course assignments incorporated collaborative learning models described by Wang (2007), such as the jigsaw method and the resource-based method. More hands-on practice and assignments using peer-to-peer learning methods, such as the models described by Wang, were suggested by study participants to better prepare others for the role of research mentor. These strategies may lessen the effects of the research mentors' anxiety and provide a clear path for support and assistance with challenging situations.

The Research Mentor Program at UNH Manchester includes all writing peer tutors but each year's cohort is small so ramping up to accommodate a large number of participants may require adaptation to the model studied. A critical component that must be included in any adaptation of the Research Mentor Program is the creation of reciprocal learning environments. In the UNH Manchester model, the peer-to-peer relationship of the tutoring dyad is replicated in the collective peer cohort of the Tutor Development course. Through course activities, the research mentors apply the

strategies and skills learned by guiding one another in the mock-tutorial assignments foreshadowing the future tutorials with first year students. Participants in this study noted that both reciprocal environments, the peer dyads and the course cohorts, were instrumental for advancing their own learning and skill development. This collaborative learning environment supports good research practice and prepares research mentors to be effective in the one-on-one tutorial.

Recommendations

This study appeared to confirm that the dyadic relationships established in the Research Mentor Program created reciprocal learning environments that enabled the research mentors to advance their own knowledge while guiding students through the research process. However, more research is needed; due to the small sample size and the self-selection of participants these findings may not reflect the experiences of other research mentors in the program. One recommendation is to further adapt the survey instrument, such as incorporating behavior frequency questions and eliminating irrelevant questions, then to administer it to all research mentors who participated in the program. Additionally, conducting two-to-three focus groups would allow an opportunity to delve deeper into survey responses to gain a better understanding of the research mentors' experiences. These focus groups must be led by an individual not connected to the Research Mentor Program to increase study credibility. This follow-up study is necessary to determine if the current study's findings are consistent across all participants of the program.

This study looked backwards, requiring participants to reflect on past experiences to describe their role as research mentors. A limitation of the study was

the lack of baseline information on participants' perception of their knowledge and abilities prior to becoming research mentors in order to measure perceived change. A second recommendation is to conduct a longitudinal study beginning with a pre-participation measure, following research mentors through subsequent semesters, and ending with a final measure two years after graduation to determine impact of program participation on post-graduate or professional work experiences.

This study examined participants' perceptions of learning and personal development but did not incorporate direct assessment of learning or skill growth. A third recommendation is to conduct a study focusing on direct assessment of learning outcomes, however, as Harmon (2006) noted assessment tools need to be developed to evaluate the specific learning outcomes to be measured. A further examination of the professional literature may render potential avenues to explore in this regard.

A fourth recommendation is to identify other academic institutions providing research mentor programs and conduct a cross-institutional study. The literature review conducted for this study identified a small number of institutions offering similar programs. If the programs are on-going, then a starting point for further exploration and potential collaboration exists.

Summary

This study contributes to the professional literature for both academic librarianship and writing center scholarship by examining the lived experiences of the research mentors to understand how reciprocal learning environments impact learning and development. Research findings appeared to confirm that: 1) employing peer-to-peer learning and scaffolding instruction across the semester in small segments,

instead of in a single information-rich instruction session, supported deep learning; and 2) establishing peer tutoring relationships created a reciprocal learning environment whereby students learn from each other. Three effects of program participation were identified: 1) participants expressed uncertainty and self-doubt in their abilities to initially succeed as a research mentor; 2) participants acknowledged a perceived increase in learning and personal development; and 3) participants attributed increased learning and personal development to the reciprocal learning environment engendered in the peer-to-peer dyads. Several recommendations for future studies were offered that could expand upon and enhance these conclusions to answer the question, “*But what’s in it for them?*” by affirming the value and benefit intrinsic to the role of the research mentor.

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APPENDIX

Appendix A Invitation to Participate

Dear UNH Manchester Research Mentor,

Happy New Year! I hope 2014 will be a good year for you.

I am writing to you today because you completed UMST 521 Tutor Development and participated as a peer research mentor. While continuing to work with the UNH Library, I am also a doctoral student in the Learning, Leadership, and Community program at Plymouth State University. I am currently working on my dissertation research tentatively entitled; *“But what’s in it for them: Exploring the effects of participation in the library research mentor program from the mentors’ perspective.”*

In order to gather data for this research study, I will be interviewing a sample of students who participated as peer research mentors in the program between 2004 and 2012. I am writing to ask you if you are willing to be part of the participation pool. Once I have a pool of willing participants, I will select a sample percentage from that pool and set up interviews. If you are willing to participate and are selected for the interview sample, then you also must be willing to meet with me for an interview to discuss your experiences serving as a peer research mentor. I anticipate the interview to last 60 – 90 minutes. I will record all interviews and transcribe those recordings. I will send a copy of the transcription to the individual interviewed to verify accuracy. I hope to have all interviews completed no later than February 28, 2014.

If you are willing to be included in the participant pool, please respond to this email confirming your willingness to participate. Please complete the few questions below in your reply and provide me with your preferred contact information (email, phone, etc). I will acknowledge your reply. Participation is voluntary, and if you choose not to participate, no worries. I appreciate that you took time to consider my request and if you would send a simply reply stating that you are not able to participate, that would be very helpful to me.

QUESTIONS:

1. In what semester and year did you complete USMT 521 – Tutor Development?
2. How many semesters did you serve as a peer research mentor at UNH Manchester – include the semester you completed UMST 521?
3. What was your status when you first began your coursework at UNH Manchester – freshman or transfer student?
4. Did you complete ENGL 401 First Year Writing at UNH Manchester?
5. Prior to becoming a peer research mentor did you work with a peer research mentor for research assistance?
6. What was your age when you began serving as a peer research mentor?

I look forward to hearing from you soon. Thank you for considering my request, and I hope you will be willing to help me complete this research study by volunteering to be part of the participation pool.

Cheers,
Annie Donahue
Interim Dean, UNH Library

Appendix B
Letter of Informed Consent
Interview Protocol

Dear UNH Manchester Research Mentor:

My name is Annie Donahue and I am the Interim Dean of the UNH Library and a doctoral student in the Learning, Leadership and Community program at Plymouth State University in Plymouth, New Hampshire. I am currently working on my dissertation research entitled, "But what's in it for them: Exploring the effects of participation in the Library Research Mentor program from the mentors' perspective." The focus of this study will be from the Research Mentors' perspective and I anticipate approximately 40 - 60 individuals to be eligible to participate in this study. You have been selected to receive this invitation to participate because you completed the Tutor Development course and served as a Research Mentor. Your participation in this study is voluntary. If you refuse to participate, you will not experience any penalty or negative consequences.

In this study, I will explore research mentors' experiences by conducting individual interviews. If selected to participate, you will be asked to answer questions related to your role as a research mentor and the effects of your participation in the program. These interviews will be designed to be approximately one hour in length. If you agree to participate, you may refuse to answer any question and/or if you change your mind, you may withdraw at any time during the study without penalty or negative consequences. I will be taking notes and recording all interviews.

Individual participants' names and information will remain anonymous and I will make every effort to maintain confidentiality of the data. Anytime that communication is conducted via the internet there is a minimal risk of loss of confidentiality. We do not anticipate any risks to you by participating in the study.

Collected data will be stored in the UNH Manchester Library in a locked file accessible only by the instruction librarians. I will use the data collected in this study in my dissertation research and may write up the findings of this study for publication and presentations. Data collected in this study may be used for program evaluation purposes. The results of the study will be available to you when the analysis is completed. You will not receive any monetary compensation for participation in this study. While there are no direct benefits to you as a participant, we foresee that the data we gather may lead to improvements to the Library Research Mentor program which we hope will result in long-term benefits to future students.

If you have any questions about the study at any time, you can contact Annie Donahue via email at annie.donahue@unh.edu. If you have any questions about your rights as a research subject you may contact Dr. Julie Simpson in UNH Research Integrity Services at 603-862-2003 or julie.simpson@unh.edu to discuss them. Thank you for your consideration.

Sincerely,

Annie Donahue
Interim Dean, UNH Library

Yes, I, _____ consent/agree to participate in this research project.

No, I, _____ do not consent/agree to participate in this research project.

Signature

Date

Appendix C Interview Guiding Questions

The purpose of the study is to explore the research mentors' experiences of participating in the Research Mentor Program from their own perspectives. So I want to learn about past experiences in a teaching/tutoring (or mentoring/counseling) role. I also want to know specific details of the work you did as research mentors and how you felt about that work. I want to know what impacts you believe occurred as a result of participation in the program and what meaning you attribute to these experiences.

1. Please tell me about your experiences prior to coming to UNH Manchester. Describe any instances where you were engaged in teaching or tutoring. Can you identify and describe any instances when you served as a mentor, either informally or through a structured program?
2. Please describe your role in the ENGLISH 401 classroom as a research mentor. How did you feel about that interaction?
3. Please describe a typical tutorial session. What did you do? What did the student do? How did you feel about the exchange that took place?
4. Please describe your interactions with the librarian in the classroom. What were your expectations for your role?
5. Please describe the activities that best prepared you to fulfill the role of research mentor. How might you have been better prepared?
6. How did the overall experience impact you?
7. Thank you for this valuable information, is there anything else you'd like to add before we end?

Appendix D
Letter of Informed Consent
Survey Protocol

Dear UNH Manchester Research Mentor:

Beginning in spring semester 2011, the librarians at UNH Manchester (UNHM) implemented a short research study to continually assess the effectiveness of the Library Research Mentor Program. In past semesters the study was focused on measuring learning outcomes of the First-year Writing students. We now intend to focus on examining the program from the Research Mentors' perspective. We anticipate approximately 40 - 60 individuals to participate in this survey. You have been selected for participation in this study because you completed the Tutor Development course and served as a Research Mentor. Your participation is voluntary, you may refuse to answer any questions, and you may discontinue your participation at any time. Refusal to participate in the study will not affect your grade or class standing.

If you decide to participate, you will be asked to complete an online questionnaire. Your total time commitment in this study is estimated to be approximately 10 to 20 minutes to complete the online questionnaire. The online questionnaire follows this notice of informed consent and will be accessed if you select the next button at the bottom of the page. This questionnaire will take approximately 20 minutes to complete. Your participation is voluntary, and you may skip any question you do not wish to answer. Individual participants' names and information will remain anonymous and we will make every effort to maintain confidentiality of the data. Anytime that communication is conducted via the internet there is a minimal risk of loss of confidentiality. We do not anticipate any risks to you by participating in the study.

We will store collected data in the UNH Manchester Library in a locked file accessible only by the instruction librarians. Data collected in this study will be used for program evaluation purposes. I may also use the data collected in this study in my dissertation research and may write up the findings of this study for publication and presentations. The results of the study will be available to you when the analysis is completed. You will not receive any monetary compensation for participation in this study. While there are no direct benefits to you as a participant, we foresee that the data we gather will lead to improvements to the Library Research Mentor program which we hope will result in long-term benefits to future students.

If you have any questions about the study at any time, you can contact Annie Donahue via email at annie.donahue@unh.edu. If you have any questions about your rights as a research subject you may contact Dr. Julie Simpson in UNH Research Integrity Services at 603-862-2003 or julie.simpson@unh.edu to discuss them.

Appendix E Modified Survey

Library Research Mentor Program – Spring 2014

Background Information

Please answer these demographic questions to the best of your ability.

1. In what semester and year did you take the course UMST 521 - Tutor Development?

2. How many semesters did you serve as a peer research mentor at UNH Manchester? Please include the semester you were enrolled in UMST 521 - Tutor Development.

- 1
 2
 3
 4
 5
 6+

3. What was your status when you first started at UNH Manchester?

- Freshman student
 Transfer student

4. Did you complete ENGL 401 at UNH Manchester?

- Yes
 No

5. Prior to becoming a peer research mentor had you worked with a peer research mentor for research assistance?

- Yes
 No

6. What was your age when you began as a peer research mentor?

- 18 to 20 years
 21 to 22 years
 23 to 24 years
 25 to 26 years
 27 years or older

7. What is your gender?

- Female
 Male
 Other

8. What was/is your academic major?

9. What was your cumulative grade point average prior to becoming a peer research mentor?

10. What is your undergraduate cumulative grade point average today?

Learning and Development Questions

Please answer these questions based on your experiences since becoming a peer research mentor at UNH Manchester.

11. I understand the differences among my peers and adapt my mentoring approach to meet each student's individual strengths and weaknesses.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree
 Strongly disagree

12. I work collaboratively with my colleagues and peers to discuss solutions to problems.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree
 Strongly disagree

13. I use Boolean logic more effectively to construct search strategies when using the library databases.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

14. I value working cooperatively in a team to achieve a common goal.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

15. I am more confident using library databases for my research projects.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

16. I had the opportunity to meet and work with people who are different than me.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

17. I am better able to help others in their decision-making and problem-solving processes.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

18. I am a better listener.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

19. I am more aware of how I learn and study.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

20. I am better able to evaluate sources for use in my research projects.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

21. My interpersonal communication abilities have improved.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

22. I adapted my study skills to be more academically successful.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

23. I am more confident speaking in public.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

24. I am more confident evaluating the sources found to complete my research projects.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

25. I am more aware of my skills and abilities (e.g. communication skills, time management, and organizational skills, etc.)

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

26. My decision-making and problem-solving skills have improved.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

27. I prefer working alone when making decisions and solving problems.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree

Strongly disagree

28. I participated more often in campus activities, events, and organizations.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree
 Strongly disagree

29. I am more effective in my time management and organizational skills.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree
 Strongly disagree

30. I am more confident in my abilities to lead others.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree
 Strongly disagree

31. I avoided courses with heavy research components.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree
 Strongly disagree

32. I believe my self-confidence has increased.

- Strongly agree
 Somewhat agree
 Neither agree nor disagree
 Somewhat disagree

Strongly disagree

33. I am more comfortable interacting with professors.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

34. My grade point average increased.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

35. I believe that being a research mentor has enhanced my college experience.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

36. I am more comfortable asking questions in class.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

37. I am more confident in my abilities to solve problems.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree

- Somewhat disagree
- Strongly disagree

38. My ability to develop a focused research topic has improved.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

39. I utilized university resources (the CAE, academic advising, the library, etc.) more often.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

40. I feel that my involvement in the research mentor program has had NO effect on my learning and development.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Adapted from *Survey Regarding Satisfaction, Learning and Development of Peer Mentors in Higher Education* (Posa, 2011).

Appendix F Survey Results

Learning and Development Survey						
	Academic Success	Strongly Agree	Somewhat Agree	Neither Disagree or Agree	Somewhat Disagree	Strongly Disagree
Q22	Adapted Study Skills	5	2	1	0	0
Q29	Time Mgmt. & Organizational Skills	3	4	0	1	0
Q34	Grade Point Average Increased	1	1	5	1	0
Q39	Utilized University Resources	6	1	1	0	0
	Collaboration					
Q12	Collaborate with Colleagues	6	2	0	0	0
Q14	Value Working Cooperatively	4	4	0	0	0
Q27	Prefer Working Alone	0	2	5	1	0
	Communication Skills					
Q18	Better Listener	6	2	0	0	0
Q21	Interpersonal Communication	7	1	0	0	0
Q23	Confidence Public Speaking	3	4	1	0	0
	Decision-making & Problem-solving					
Q17	Assist Others with DM & PS	4	4	0	0	0
Q26	Improved Personal DB & PS	3	5	0	0	0
Q37	Confident Problem Solving	5	1	2	0	0
	Diversity					
Q11	Understand Differences	5	3	0	0	0
Q16	Opportunity to Meet Diverse People	8	0	0	0	0
	Information Literacy Skills					
Q13	Boolean Logic Use	6	2	0	0	0
Q15	Confident with Databases	6	2	0	0	0
Q20	Better Able to Evaluate Sources	6	2	0	0	0
Q24	Confident Evaluating Sources	6	2	0	0	0
Q31	Avoid Heavy Research Courses	0	0	2	1	5
Q38	Develop Focused Topic Improved	4	4	0	0	0
	Intrinsic Benefit					
Q30	Confident Leading Others	4	4	0	0	0
Q32	Increased Self-Confidence	6	1	1	0	0
Q35	Research Mentor Enhanced College Experience	8	0	0	0	0
Q40	Research Mentor No Effect on Learning & Development	0	0	0	1	7
	Reflection					
Q19	Awareness of Learning & Studying	6	2	0	0	0
Q25	Awareness of Skills & Abilities	4	3	0	1	0
	Student Engagement					
Q28	Increased Campus Participation	2	2	3	1	0
Q33	Comfortable Interacting with Professors	5	3	0	0	0
Q36	Comfortable Asking Questions in Class	2	2	2	1	0

Appendix G
Sample Interview Transcripts

EXAMPLE 1

RESEARCHER: THANK YOU FOR COMING TODAY. AND WHAT I WILL ASK YOU TO START WITH IS TO PLEASE TELL ME ABOUT YOUR EXPERIENCES PRIOR TO COMING TO UNH MANCHESTER. DESCRIBE ANY INSTANCES WHERE YOU WERE ENGAGED IN TEACHING OR TUTORING? CAN YOU IDENTIFY AND DESCRIBE ANY INSTANCES WHEN YOU SERVED AS A MENTOR, EITHER INFORMALLY OR THROUGH A STRUCTURED PROGRAM.

ROSALIND: BIG QUESTION.

RESEARCHER: TAKE IT IN PIECES.

ROSALIND: I WAS A TRANSFER -- I CAME FROM THE UNIVERSITY OF NEW ENGLAND, UNE. THERE WAS VERY LITTLE TUTORING, VERY LITTLE ANYTHING ON THE CAMPUS IN TERMS OF DEVELOPMENT. I WAS VERY MUCH ON MY OWN ACADEMICALLY. WHICH WAS FINE BY ME. I DID REALLY WELL. SOME OF MY FRIENDS DID NOT DO SO WELL, SO I WOULD HELP THEM OUT WITH STATISTICS. I REMEMBER ONE GIRL SHE WAS AN EMT AND LIVED DOWN THE HALL IN MY FRIEND'S DORM, SHE FIGURED OUT I WAS THE SMART ONE OF THE GROUP. AND WE'D SIT IN THE HALL ON FRIDAY AND SATURDAY NIGHTS BEFORE MONDAY MORNING CLASS AND DO STATISTICS HOMEWORK. CHECK EACH OTHER. SHE NEEDED IT FOR THE MAJOR, I DIDN'T, BUT I GOT IT REALLY WELL. WE WERE IN THE SAME CLASS. ONE OF THOSE HELP CAN KIND OF PEER COLLABORATION IS THE PHRASE I USE. AND SO I DID THAT. AND THEN BEFORE THAT, AND I'M STILL A 4 H LEADER. A 4 H MEMBER AND LEADER. FROM THE TIME I WAS 12 I HAVE BEEN DOING MENTORING, LEADERSHIP ROLES, ALL SORTS OF STUFF?

EXAMPLE 2

RESEARCHER: GREAT. OKAY. THANK YOU. I'M GOING TO ASK YOU TO THINK ABOUT YOUR ROLE AS THE RESEARCH MENTOR, IN PARTICULARLY IN THE ENGLISH 401 CLASSROOM. COULD YOU DESCRIBE WHAT YOUR ROLE WAS IN THAT CAPACITY?

MALIA: IT WAS KIND OF ASSISTANCE WITH THE ENGLISH CLASS, THEY WOULD COME IN WITH A PAPER OR THE TOPICS THEY WANTED TO RESEARCH, AND WOULD TALK ABOUT WHAT THEY WANTED TO DO WITH THEIR TOPIC, WHAT THEY WANTED TO RESEARCH. PART OF MY JOB WAS TO KIND OF HELP THEM FIND OUT WHAT THEY WANTED TO CONVEY THROUGH THE PAPER OR WHAT THEY WANTED TO FIND OUT. WE WOULD DO SOME BUBBLE DIAGRAMS, OR SOME WEB DIAGRAMS TO LET THEM TALK OUT WHAT THEY WANTED TO SEEK THROUGH THE RESEARCH PAPER AND WHAT THEY WANTED TO FIND. AND ALSO TEACHING THEM HOW TO BE OPEN MINDED, SO NOT FUNNELING IN ON THE RESEARCH BUT OPEN TO WHAT IT DOES SHOW. I HELPED THEM MAKE OUTLINES, THE FLOW IN THE PAPER. I HELPED ONE STUDENT THEY NEEDED CITATIONS.

RESEARCHER: WITH WHAT?

MALIA: CITATIONS. HOW TO PROPERLY CITE SOURCES IN THE PAPER AS WELL AS IN THE WORK CITED OR THE BIBLIOGRAPHY PAGE, DEPENDING ON THE FORM. THE PROOFREADING PROCESS WAS MORE HELPING THEM READ THEIR OWN PAPER AND DEVELOP THE FLOW. HOW IT FLOWED TOGETHER. THEIR CONCLUSION MADE SENSE WITH THEIR TOPIC, AND IF THEY ORGANIZED THEIR MATERIAL IN A WAY THAT MADE SENSE AND FLOWED WELL. TRYING TO LET THEM LEARN HOW TO RESEARCH. TAKE A STEP BACK AND LET THEM LEARN HOW TO INITIATE SEARCHING OUT FOR SOURCES AND STUFF LIKE THAT. AND ALSO HOW TO USE THE DATABASES. THAT WAS ANOTHER THING. WHICH DATABASES TO USE.

EXAMPLE 3

RESEARCHER: THANK YOU. COOL. ALL RIGHT. WE'LL GO INTO THE WEEDS AND I'LL ASK YOU TO DESCRIBE A TYPICAL TUTORIAL SESSION. I WANT TO KNOW WHAT YOU DID IN THE TUTORIAL SESSION, BUT I ALSO WANT TO KNOW WHAT STUDENTS DID IN IT?

CARRIE: SO I GUESS IT WOULD DEPEND ON WHAT STAGE OF THE RESEARCH THE STUDENT WAS IN. IF THE STUDENT WAS STILL TRYING TO NARROW DOWN THE TOPIC, WE MIGHT ACTUALLY JUST SPEND THE TUTORIAL BRAINSTORMING, WHICH WOULD CONSIST OF ME ASKING QUESTION AFTER QUESTION AND THE STUDENT KIND OF ANSWERING MY QUESTIONS, AND I WOULD WRITE DOWN THE ANSWERS SO THEY HAD IT FOR LATER. IF THE STUDENT ALREADY HAD STARTED THEIR RESEARCH, I WOULD ASK THEM IF THEY HAD WRITTEN ANYTHING FROM THE SOURCES THAT THEY HAD SO FAR. IF THEY EVALUATED THE SOURCES SO FAR. IF WE HAD SOME WRITING DONE... (RESEARCHER'S MICROPHONE FELL) AM I STILL HERE?

RESEARCHER: YOU ARE. THE MICROPHONE WENT FOR A RIDE. IT'S OKAY. WE LOVE TECHNOLOGY MISTAKES.

CARRIE: RIGHT.

RESEARCHER: IF THEY HAD A DRAFT OR SOMETHING WRITTEN?

CARRIE: WE'LL TALK ABOUT EMPTY SPACES. THINGS THEY NEEDED TO ANSWER WITHIN THE RESEARCH PAPER STILL AND WHAT TYPES OF SOURCES THEY MIGHT BE LOOKING FOR TO ANSWER THOSE QUESTIONS.

EXAMPLE 4

RESEARCHER: OKAY. I'LL TAKE US DEEPER INTO THE WEEDS IN THE NEXT QUESTION. I WILL ASK YOU TO DESCRIBE YOUR INTERACTIONS WITH THE LIBRARIANS AND IN THE CLASSROOM, PARTICULARLY WITH THE INFORMATION LITERACY ACTIVITIES?

PHOEBE: GREAT. I WOULD USUALLY MEET WITH THE LIBRARIAN PRIOR TO THE INFORMATION LITERACY CLASS. AND WE'D TALK ABOUT HOW MANY STUDENTS ARE

IN THE CLASS. WHAT THE GENERAL FEEL OF THE CLASS IS. ARE THEY QUIET, ARE THEY TALKATIVE, DO THEY RESPOND WELL TO QUESTIONS OR ACTIVITIES AND KIND OF FORMULATE A PLAN. IT WAS MOSTLY THE LIBRARIAN ASKING ME FOR INPUT ON... DO YOU THINK THIS WILL WORK, WILL THIS WORK. AND BRIEFING ME ON WHAT SHE PLANNED TO DO. WHEN WE GOT INTO THE CLASSROOM, I ACTED AS AN ASSISTANT KIND OF. THE LIBRARIAN WOULD LEAD THE DISCUSSION, EXPLAINING DIFFERENT TERMS, KEYWORDS, HOW TO GO ABOUT DOING THE RESEARCH, GETTING INTO THE DATABASES, WHEN DOING ACTIVITIES I WOULD MODEL THEM FOR THE CLASS. IF THE LIBRARIAN HAD THEM BRAINSTORM KEYWORDS OR QUESTIONS, I WOULD DO THE SAME THING. WHEN WE WERE DONE, WE'D TALK ABOUT WHAT I DID AND MAYBE WHAT I COULD DO BETTER AND I WOULD TALK ABOUT MY REASONING BEHIND DOING THINGS. THEY WOULD GET A FEEL FOR WHAT THEY SHOULD LOOK TO ACCOMPLISH IN THAT TYPE OF ACTIVITY. AND THEN WHEN THEY GOT INTO THE DATABASES, I WOULD WALK AROUND AS A SECOND SET OF EYES AND EARS. IF ANYBODY HAD A QUESTION, I WOULD TRY TO ANSWER IT, IF I COULDN'T, I WOULD FLAG RACHEL OR CAROLYN DOWN AND HAVE THEM COME HELP. I WOULD LISTEN TOO. I WOULD KNOW THE ANSWER FOR NEXT TIME. I THINK THAT'S IT AS FAR AS THE CLASSES WENT.

EXAMPLE 5

RESEARCHER: OKAY. AND I WONDER IF YOU THINK ABOUT HOW HAS THE OVERALL EXPERIENCE IMPACTED YOU? WHAT HAVE YOU GAINED, OR NOT, FROM THE OVERALL EXPERIENCE?

MAURA: FROM TUTORING IN GENERAL?

RESEARCHER: YES.

MAURA: I HAVE GAINED A LOT. I STARTED TUTORING MY SECOND SEMESTER HERE. AND I THINK I HAVE ALWAYS BEEN A REALLY SHY PERSON AND BEING A TUTOR HAS HELPED ME KIND OF COMMUNICATE WITH PEOPLE ON A BETTER ONE ON ONE OR IN GROUPS. AND I FEEL LIKE IT ALSO HELPS MY OWN SCHOOL WORK BECAUSE I'M CONSTANTLY THINKING ABOUT THESE THINGS. IN A PAPER YOU THINK ABOUT THE THESIS, ORGANIZATION, AND WHEN YOU ARE TALKING ABOUT IT WITH OTHER PEOPLE, YOU START TO APPLY IT TO YOUR OWN PAPERS. I HAVE ALWAYS FOUND THAT REALLY HELPFUL.