

Experiences and Recommendations for Collaborating on Master's of Education Thesis Research

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Abstract

This paper is a self-analysis of the experiences of three familial graduate students who collaborated on a master's thesis research study. Thesis collaboration at the master's degree level is uncommon in the United States, but a university chose to allow three Master's of Education students to attempt a capstone research study together. Data collected were reflective journals and open-ended group question discussions. The results indicated their collaboration contributed to (a) personal and professional support, (b) reflection about the research process, (c) sacrifices of power and time, and (d) personal/professional growth. Discussions for higher education collaborative thesis considerations are offered, as well as recommendations for students, advisors, and departments considering collaborative research on a master's degree thesis.

1. Introduction

In the 2010-2011 academic year, 185,009 master's degrees in Education were awarded in the United States, which represented the second largest number of graduate degrees in any field. As a result of shifting educational paradigms, many master's programs in education are becoming more dynamic in nature and are more responsive to graduate students' differences, distance and remote educational needs, and K-12 classroom support. Researchers in higher education are increasingly collaborative and they are also aware of social learning benefits for their students [1]. Large grant projects, for example, are nearly exclusively collaborative between faculty at one or more departments, and often among more than one institute. Although the thesis is often the individual capstone project of a graduate degree, there is some growing interest in allowing collaboration on the thesis project, since it may be quite beneficial for new researchers [2].

Some authors note that collaboration can be advantageous over individual research for several reasons [3]. Peer support throughout the thesis process may be a vital component in completion of the paper and the degree, and the interpersonal

communication and interactions from cohorts can provide the support that students need to complete their projects [4] [5]. However, collaborative theses are still uncommon in higher education. This paper describes the experiences and reflections of three students who collaborated on a Master's of Education thesis.

2. Background

Collaborative research is commonplace for faculty in higher education institutions. In many American educational systems, the master's degree program is the first exposure for many to the process of undertaking a research process. While balancing work, personal and family life, classwork, and research is a challenge for many graduate students, adding research collaboration can create additional complications. However, there are many personal, professional, and cognitive benefits to collaborating on research projects.

2.1. Collaborative Research Benefits

Completing a thesis can empower graduate students to identify themselves as professionals and can help them develop cognitive skills, organizational practices, and research methodologies [6]. However, it can be challenging for students to learn how to research, synthesize, and write a thesis. Nearly all learning is "essentially a social process", and collaboration may allow graduate students to learn to research as they discuss with others and reflect upon the research process [7]. With proper faculty-guided social learning, including peer discussions and shared course experiences, those who collaborate can increase program objective attainment and develop into more reflective thinkers. Students can benefit from supportive groups as they undertake the thesis process [8].

Collaboration offers a built-in system of checks and balances, allowing group members to hold one another accountable for their work. It may aid graduate students in producing higher quality outputs and meeting completion deadlines because they feel accountable to succeed within their groups [9]. Collaboration allows for a continuous discussing and editing

process that

2.2. Thesis Collaboration Challenges

Collaboration offers growth potential for researchers, but brings distinct challenges. Successful collaboration depends on individual personality traits, group dynamics, trust, and communication [13]. Group members may become frustrated with the process if they do not adequately delegate responsibilities and find time to communicate and schedule meetings [5]. There are also debates regarding how to decide authorship order in the collaborative research publication.

Some institutions are concerned that collaborative projects may undermine the knowledge and skill acquisition that occurs during a thesis. Often, the assumption is that collaborative research means less work for individuals [10]. While it is clear that many educators and researchers support collaborative studies, at the master's level, thesis collaboration is uncommon. The hesitation for accepting collaborative work may result from an inability to move away from traditional, individual-centered values and "spring from the American emphasis on the individual...on distinguishing oneself in order to stand above others" [10].

Some are concerned that collaboration does not always produce a higher quality product than individual research [14]. However, educators view social interaction as a valuable learning strategy, and many institutional researchers collaborate on their own work, yet it is not often employed in graduate capstone projects such as theses in America [15]. This study adds to the limited research in the area of collaborative master's theses. The purpose of this study is to describe the experiences and reflections of three Master's of Education students who collaborated on a thesis.

3. Methodology

In 2008, a small, private, Midwest university allowed three graduate students in the Department of Education to collaborate on a quantitative master's thesis for their degree, a Master's of Education in Curriculum, Instruction, and Assessment. The researchers were all teachers in public schools. The first researcher, [Author 1], was a 24-year-old music instructor at a rural school. He had one year

of teaching experience prior to beginning his master's thesis. The second researcher, [Author 2], was a 26-year-old language arts and social studies teacher in a small, rural school. She taught grades seven through twelve and had three years of teaching experience prior to beginning her master's thesis. The final researcher, [Author 3], was a 28-year-old language arts and social studies instructor at a rural school. He taught grades nine through twelve and had two years of teaching experience prior to beginning his master's thesis. None of the graduate students had experience conducting empirical research prior to the thesis study, beyond small class projects embedded in their master's degree coursework. What made this collaboration unique were the relationships between the researchers. [Author 1] and [Author 2] are brother and sister, while [Author 2] and [Author 3] are married. All three lived in the same rural town, yet each taught in a different community.

3.1. Project Description

Each of the researchers had a different academic advisor. One advisor mentioned the idea of a collaborative thesis to the graduate students, and brought it to the attention of the other two advisors, who agreed to be co-advisors of the thesis and developed an additional qualitative project to ensure academic rigor. The thesis project that the graduate students collaborated on was a quantitative study of multiple intelligences and academic achievement. In addition to the collaborative thesis product, the students were also required to write a second, qualitative paper about their experiences collaborating. The researchers were guided by the central research question: What are the perceptions and experiences of three graduate researchers who collaborated on a thesis?

The three graduate students were required to keep journals about their experiences while researching for their thesis. Next, they met with one advisor monthly who took charge of the additional project. During these meetings, the students and advisor discussed the journals, the thesis progress, and the collaborative process. The advisor guided them on their thesis project and the secondary paper. The other two advisors also provided guidance via email and two in-person meetings.

The primary faculty advisor guided the graduate students to find resources and develop themes from their analyses on this paper. The final product was about 50 pages, which included the title page, table of contents, and reference pages. It generally followed the format of a traditional research manuscript, including an introduction, background information, methodology, findings, and a discussion. Finally, the researchers formally presented their findings and fielded faculty questions at a presentation immediately following the thesis defense, and provided their advisors with a copy of the written paper. The paper and presentation both included recommendations for the department in considering future master's degree thesis collaboration.

3.2. Analytical Methods

Permission to perform research was obtained through the university's Institutional Review Board. During the thesis process, the researchers kept individual reflective journals that expressed their thoughts, insights, ideas, and concerns. Each made the first journal entry on the day they met with their advisor to discuss the option of collaborative research, and made the last entry the day after their thesis defense. This spanned three academic semesters (fall, spring, and summer). The researchers often wrote entries after thesis meetings and collaborative work. Discussions about the collaboration process were also noted in their research journals. They averaged two entries a week throughout the eight months of research, and entries varied in length from three sentences to two pages.

After they completed their collaborative thesis data analysis and much of the thesis writing, the researchers worked on the analysis for the secondary qualitative project. They conducted group interviews, in which they asked semi-structured, open-ended questions about their experiences to one another, and the group answered and discussed them, noting the results in their journals. Since the three researchers were the also the participants in this study, they were actively involved in the research. They individually coded the journal entries and developed categories and themes [16]. They then coded one another's journals and checked to see if the interpretations matched. After they developed themes for the study, the researchers made suggestions to the university's Department of Education about considerations for future qualitative research collaborations based upon their experiences.

3.3. Validity

The researchers were interested in the perspective of individual realities of the participant researchers. The three participants in this study also performed the research, which aided in the understanding that the portrayed reality is generally representative of those involved [16]. The researchers addressed validity using multiple measures, including personal involvement in the research, peer debriefing, and multiple data collection methods [16] [17].

The researchers used peer debriefing by continuously reviewing the data with one another (since they were simultaneously researchers and participants), as well as reviewing the data, initial analyses, and findings with their project advisor. Additionally, the group used data collection methods of journaling and a group interview to compare and contrast findings and greater inform the results and conclusions of this study. Since the results were interpreted and edited by all research participants, they accurately portrayed the beliefs and experiences of those involved in the project.

4. Findings

Upon coding the journals and discussing the findings, the researchers grouped them into four emergent categories: Support, Reflection, Sacrifice, and Growth. Table 1 represents the codes, code count, categories, and themes of this study. The four categories represented their beliefs about the process of their thesis collaboration. The support that developed by working together was vital to their success. The group dynamics and individual styles allowed them to reflect upon the research and contribute their strengths to the group. However, with collaboration came sacrifices in their personal and professional lives, as well as sacrifices in individual power resulting in forced compromises. The researchers also felt as though they grew in their research, writing, and thinking abilities through working together.

4.1. Support

Since this was the first collaborative thesis the university had ever approved, the three graduate students strove to ensure they would produce a quality thesis and contribute significant work towards this capstone project. [Author 1] wrote, "This needs to work out. I'd feel terrible if they let us do this and we let them down." Their three advisors supported their collaborative project from the onset, which was important to the graduate students' motivation. The professor who took on the role of the primary collaborative project advisor was the first to suggest the idea. Initially, she felt that the unique relationship of the three researchers would make it an appropriate option, and discussed the idea with her colleagues. She was able to move forms quickly and defended the project from the beginning.

The success of the thesis and the collaborative study was made possible by the close familial relationships of the three researchers. [Author 3] and [Author 2] were married and found it convenient to be able to discuss their ideas and frustrations at any point. [Author 2] indicated she “talked to [Author 3] all the time about it. Sometimes I vent, sometimes I ask questions, but it’s nice to have someone always there.” The third researcher, [Author 1], who was [Author 2]’s brother, also found it beneficial to be able to discuss topics openly and honestly.

The researchers supported one another because they trusted the others to uphold their responsibilities and scheduled meetings. During one particularly busy time of the year in which [Author 1] was coaching football in the evenings, [Author 3] wrote, “I wish he was here to work on Chapter Three this week, but I know that we’ll get a lot done this weekend.” [Author 1] stated, “I’m teaching music, have concerts and competitions, coach football. I feel bad we can’t meet more, but I’ll make up for it.” The three supported one another’s schedules because they understood personal and professional responsibilities, and often met late at night and on weekends when they were available.

Finally, the researchers were able to support the group with their unique skill sets. [Author 2] and [Author 3] were English teachers and were able to offer a keen eye for detail and editing. While [Author 1] was also a proficient writer, he supported the group with his technological adeptness and statistical analysis. The creation of a thesis requires a thorough knowledge of how to access information, use multiple computer programs successfully, and store the thesis safely. The strengths exhibited by the individual researchers not only supported the growth of the thesis, but also helped all researchers reflect upon the research process and their roles within it.

4.2. Reflection

Once the writing process had begun, the three graduate students found that all members were proficient writers. Even so, collaborative writing was extremely complex. It was difficult to develop a continuous flow of thoughts because each sentence was scrutinized by three people and approved by the group before it would be included in the paper. At times, they discussed the fact that it might have been easier for one person to write a thesis because they could get their thoughts down without having constant starting and stopping. [Author 1] wrote, “It’s very frustrating to work together. I just want to get [my] ideas down and get it done.” His writing style was to get the main points down first and edit later, while [Author 2] and [Author 3] often edited as they worked. This led to many delays due to

constant conversations about the best ways to advance their writing.

Through the discussions, the researchers learned more about themselves and about research skills. [Author 2] felt that she “actually learned more about Word software and finding resources by talking about it with [Author 1] and [Author 3],” while [Author 3] felt he “had to compromise more by doing this as a group, which is actually beneficial.” As they read research for their literature review on the living room floor, the three discussed and reflected upon what they were reading. [Author 3] added, “We’ll be reading, and someone will say, ‘Look what I found.’ And we’ll talk about it. It actually makes the literature review fun. Almost.”

The dialogue and reflection required democratic principles in the group. In the beginning, they each had strong opinions and were resolute in their vision of the final project. However, they quickly found that this hindered the initial development of the thesis. There were three ideas about the final direction of the paper. However, their three-person was useful because it allowed them to vote democratically when there was no other viable way to resolve their differences. The three researchers agreed that this group reflection was one of the most valuable aspects of their collaboration and led to much deeper thinking about their research.

4.3. Sacrifice

The nature of collaboration forced the researchers to sacrifice power and time. They felt that more work was created because they not only had to research, read, and write the paper, but also had to synthesize their individual inputs into one voice. On several occasions, each of the researchers felt that it would have been much easier to do the thesis on their own. During a particularly long lull in progress, [Author 1] wrote, “I have talked to several other people about their thesis. They don’t have to keep starting and stopping. I think that I would have been done with this a long time ago on my own.”

When they started the collaboration, they underestimated how much time each task would consume, partly due to the collaborative work, and found that they had to sacrifice significantly more than they expected. The time dedicated to the project meant that they gave up time with family, friends, spouses, and pets. [Author 2] lamented, “With winter break almost over and school starting and so much to be done, it is very frustrating that we are all so busy. We’re still having too much difficulty meeting...I don’t like working on the weekends, especially when we have [graduate school] classes.” Weekends were not a time for relaxation; they were spent attending classes, reading, and writing.

Since they were all teachers, the three had to work around their full-time job schedules as well as

other duties that were assigned. [Author 1] was a coach and had several other music-related extracurricular activities during the school year that hindered the group from meeting. [Author 3] gave up a contracted extracurricular position to streamline scheduling, which also meant lost income for his household. [Author 2] had prior commitment that eliminated a weekday that could have worked for the other two collaborators. Because of this, they scheduled around their weekend graduate classes in order to find time to work consistently on the weekends and any school holidays, as well as late into the evening on weekdays whenever scheduling permitted. [Author 3] wrote, "So we work at night. What choice do we have? It works; we're all willing to be here, so we do it." Although the researchers sacrificed individual power in the thesis and aspects of their personal lives because of the necessary collaboration, they felt they grew personally and professionally because of the group work.

4.4. Growth

As the collaborative process progressed, their relationships changed. [Author 3] and [Author 2] believed their marriage was strengthened as their patience was tested. [Author 3] wrote, "We're compromising more now, since we had to do it so much anyway, we do it outside of the thesis." As the three spent a considerable amount of time together, they learned to work through each other's idiosyncrasies and accept one another's flaws. The bond of the three researchers was strengthened through the project. The ability to listen to and compromise about other opinions in such an intimate setting allowed the researchers to become more open in their other personal and professional endeavors. [Author 2] stated, "We can be honest and can discuss our ideas. We can forgive occasional...outbursts or disagreements over data, phrasing, or setbacks." She felt more assertive at subsequent school meetings, feeling more open to express her opinion and contribute to conversations.

All three researchers felt their writing styles improved as a result of working with the others. [Author 1] believed "it taught me patience and compromise in my writing, and also the careful consideration of word usage." [Author 2] believed she was "less concerned now with every particular detail. Also, it's nicer to know more about technology, which I definitely wouldn't have if I had done this on my own." [Author 3] felt he grew most in his "ability to work under a variety of conditions. [Author 2] and [Author 1] had a different writing style than me, and it was good to work with them. I think we're all stronger writers and thinkers now." Additionally, the three felt like they grew as researchers as a result of the collaboration.

None of the students had ever performed empirical research. [Author 3] noted, "We were fairly confused on how to even start." However, the research process seemed much less daunting since the three collaborators were constantly sharing ideas and concerns. [Author 2] felt she was weakest in statistical methods, and benefitted most "by discussing the data with the other two. It made more sense when we talked about the numbers. I'm not sure if I could have done that by email with my advisor. I need to talk things through."

After finishing the thesis, the three participants felt confident in their ability to perform future research. [Author 1] was "excited to do this more often." [Author 3] did not express so much enthusiasm for research, but acknowledged, "I did not even want to do a thesis at the start. Now I know how to research." [Author 2] was much more confident since she finished her thesis, noting, "I honestly didn't know if we could do it, but now I really think we can do any type of writing. This was such an accomplishment. I'm proud of myself and all of us for getting through this together."

5. Discussion

The three graduate students generally benefitted personally and professionally by performing a collaborative master's thesis, which often seems to be the case [6]. The support of group members was vital to the learning process of all three researchers. The success of their collaboration was dependent upon group member support. Student collaboration in higher education is beneficial in skill and knowledge acquisition, as well as in preparing novice researchers for collaborative endeavors outside of the institution [18]. The constant flow of ideas and discussion was motivating to the graduate students, and their individual strengths in the group led to a generally positive experience. Their unique relationships likely contributed to their ability to effectively compromise and communicate.

Since empirical research was an entirely new process to each of them, the collaboration let them progress together, using their strengths and reflections to grow from novice researchers to more experienced Master's of Education graduates. The participants believed they learned more about research methodology through the collaborative process, which may be attributed to the effectiveness of social learning, particularly among adult learners [7] [12]. Consistent meetings and rich discussions were vital to their learning and progress.

While collaborative research may not be beneficial or appropriate for all programs, students, or institutions, the researchers in this study found it highly motivating and effective in their professional growth. Theses may serve various purposes, but this university's vision was for their master's students to

acquire skills and knowledge to perform research at an intermediate level. The benefits of this collaborative project contributed to that goal.

5.1. Author Recommendations

The university's education department required the researchers of this study to put together recommendations for consideration of future graduate student collaboration. In the experience of the three researchers, there were seven non-negotiable aspects of their successful collaboration that should be discussed by graduate student researchers, their advisors, and their department prior to beginning thesis collaboration. These include: proximity, strong relationships, similar goals, small partnerships, writing proficiency, focus, and compromise. Without each of these collaboration researcher characteristics, the process of working together would have been significantly hindered.

5.1.1. Proximity. The authors of this study feel that it is vital to the success of all collaborative work of this magnitude that the collaborators be geographically close enough to other group members for consistent meetings. It is essential to be able to meet face-to-face and not only through email or other communication devices. While this concept is changing with more efficient meeting software, nothing yet replaces the necessity and efficacy of being able to be physically present with other researchers.

One researcher wrote, "Partners need to have similar schedules and be relatively close in location." Another researcher confirmed, "It is crucial to be close with your partners geographically, emotionally, and intellectually. As family, we can work during typically inconvenient times, like on our drive to classes, at family gatherings, and at one in the morning." For collaborators who may be further away, they should be able to find consistent times to be able to connect virtually (be it writing collaboration software such as Google Docs, or virtual meeting spaces such as Skype), and also ensure they are able to meet in person as much as possible.

5.1.2. Strong Relationships. While these authors' familial relationship helped their efforts succeed, this may not be true in all cases. Peterson upheld this sentiment, writing "In fact, the two strongest forces frustrating collaborative research are the inability of certain combinations of people to work together" [19]. Collaborative thesis partnerships need to be created from individuals that have mutual respect for one another and have the ability to accept criticism from each other. Partnerships in this type of collaborative research should be limited to those who have a previously

strong relationship and fit the proximity guideline. This type of work can be physically and emotionally strenuous, particularly for working adults, and personally and professionally respectful groups are absolutely vital for successful collaboration.

Relationships need to be strong enough for the collaborators to be able to work through setbacks and unforeseen problems. The atmosphere of the group is dependent upon the individuals involved. Lee and Bozeman "anticipate that gender, and family and marital status, will moderate the relationship of collaboration and productivity" [3]. These authors found, in their unique situation, that this sentiment was confirmed.

5.1.3. Similar Goals. Before deciding to undertake a collaborative thesis, the authors recommend that each group member discuss what the vision for their product. "It is difficult for most scientists to sacrifice the individual freedom to follow their own nose and dedicate their time to the group's achievement." [19]. This is crucial to the success of the collaboration and will save time in the long run. If the authors differ on their vision and cannot compromise, the collaboration will not work, or it will create a product that will not be an authentic representation of the researchers' intentions.

Not only do the goals for the finished product need to coincide, but it is essential that group members understand what each individual intends to achieve from the process and what they plan to accomplish. One researcher wrote, "I could see it being important for future collaborative researchers to talk about not only the project they are working on but also their personal goals before they start." Everyone must know why they are undertaking the project, both individually and collectively. Before they start, group members must ensure that they are on the "same page" in terms of what their research agendas are, and what they want to gain from performing research. These gains may include a pilot study for further research, an introduction in research for a terminal degree, action research to improve classroom instruction, or simply doing the work to earn the master's degree, among many others.

5.1.4. Small Partnerships. These researchers recommend that future partnerships, in order to be successful, remain small, limited to two or three members. The interaction required in collaborative research would be overwhelming if there were more than three voices to combine. Even with three members, the authors found that making decisions added a significant amount of time and added tension to the thesis product.

Larger groups would also cause severe difficulty in scheduling and proper delegation of work. Even though these three authors worked

similar jobs and had similar schedules, they found it difficult to meet in person frequently. The authors in this study were all strong personalities and were sometimes set in their ways. Even worse, though, would be a collaborative group in which one or more members did not have the voice to add to the thesis research, or whose voice another group member subjugated. These types of conversations must occur prior to members agreeing to research collaboratively.

5.1.5. Writing Proficiency. These researchers recommend that each individual involved be proficient in some aspect of writing. It is important to discuss, before individuals decide to collaborate, what each person feels is his or her strength. While there does not necessarily need to be one lead writer, it is imperative that each group ensure that their strengths are complementary, in order to have sufficient combined skills to create a document of such length and complexity. “Perhaps the concern of who is the leader or best writer is tempered because in collaborative-writing groups there are so many ways to contribute positively. Some students were good at generating ideas, and some at organizing. Others had an ear for the right word or were competent in mechanics”.

5.1.6. Focus. The recommendation of this group is that future collaborative research candidates stay focused. As previously discussed, setting goals and schedules is invaluable, but sticking to them is paramount to the success of the project. Stith, Jester, & Linn believed “that it is important to find someone to collaborate with who (a) you respect, (b) has a similar level of ambition, (c) is very open, (d) you enjoy working with, and (e) who stretches you and makes you a better researcher” [20]. Through any long-term endeavor, problems will arise. Discuss in advance the ability and willingness of each group member to be able to stay focused regardless of obstacles that may appear.

5.1.7. Compromise. Our final recommendation, and perhaps the most important, is to have prospective collaborative groups make sure that each potential member is capable of compromising. This includes compromising on ideas, perspectives, schedules, goals, and other group decisions. Mullen confirmed this assessment, stating, “One of the most important principles of collaborative research is to remain open to difference”. We found that our differences, when handled correctly, worked to strengthen the overall content, rather than detracting from it. Dale reinforces this, asserting, “Such conflict gives students experience with testing ideas against each other, clarifying their own ideas, and evaluating what works”.

6. Conclusion

Although they had to make personal and professional sacrifices, the researchers of this study felt they benefitted greatly from the opportunity to collaborate. It was not without complications and setbacks, but the experience of learning the research process together was incredibly empowering and created opportunities for learning, support, and reflection that may not have been present without the ability to work together.

Simply speaking, these authors highly recommend that graduate students get the opportunity to collaborate on research, even if it is not appropriate to do so on their master’s thesis project. Collaboration is a vital component of work in higher education and in PK-12 education, whether in research, committee work, work in the community, or teaching. Collaboration can and should include close work with peers and faculty who are willing to guide students with an understanding that the research process is new and complex, but prepares the graduate students for more empowered roles in their careers.

The perspectives offered are only those of these three authors involved in the project. Additional research is necessary to understand master’s thesis collaboration in other contexts, including: collaboration in larger or smaller group sizes; collaboration in other institutional contexts (including distance and face-to-face collaboration); interdisciplinary collaboration; and collaboration of diverse and multicultural students. There is a call for more collaboration in higher education research [1]. While it may not be appropriate for all students or programs, this study adds needed literature to the under-examined topic of master’s thesis collaboration, and may help open a dialogue about the efficacy of allowing students to learn socially through the thesis process.

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Table 1. Data Analysis Code Chart

Code Examples	Code Frequency	Category	Theme
Advisor support Marriage Trust Writing Skill Assistance Statistics Assistance	65	Support	The researchers believed the personal and professional support they received from their advisor, and the group, was beneficial to the research process.
Power Sacrifice Writing Sacrifice Time Lost Lull in Progress Compromise	58	Sacrifice	The researchers felt they needed to sacrifice decision-making power, writing decisions, time, and needed to compromise more as a result of the collaboration.
Relationship Improvement Patience Gained Compromise Research Skill Improvement Academic Writing Improvement	41	Growth	The researchers felt the collaboration led to personal and professional growth in their relationships, writing, and research skills.
Academic Writing Conversations Grammar Conversations	30	Reflection	The researchers felt the collaboration forced them to reflect upon their writing

Democratic Voting

research decisions.

Paper Direction Reflection

Note: This table represents the codes, categories, and themes from the data analysis of researcher journals and the focus group interview.