Student rating of skill performance opportunities in faculty-directed research

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Abstract

The purpose was to examine the feasibility of creating a faculty-driven research-based fieldwork (FW) I experience and to examine whether students engaged in a research-based FW I would report equivalent skill performance opportunities as students engaged in traditional FW I experiences. Twenty-four first-year occupational therapy students were given the option of choosing either a research-based FW I experience with a faculty member (n = 5) or a traditional FW I site (n = 19). The students self-reported their opportunities to perform ACOTE standards of practice related to professionalism, professional reasoning, use of sciences, and experiential learning using a Likert scale. Results are provided through non-parametric tests. Students in the research-based FW I reported significantly higher scores for skill performance opportunities than the students in the traditional FW I in areas of professionalism (p = .03), professional reasoning (p = .02), and experiential learning (p = .04), but there were no differences in use of sciences scores. In this small sample, first-year occupational therapy students reported a difference in skill performance opportunities for practicing professionalism, professional reasoning, and experiential learning in a research-based FW I structured by a faculty member, compared to students who chose a traditional FW I setting.

Keywords

fieldwork, education, research, occupational therapy

Cover Page Footnote

Credentials Display

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Fieldwork (FW) settings have expanded in scope over the last few decades and include opportunities for exposure to both traditional and non-traditional occupational therapy (Johnson, Koenig, Piersol, Santalucia, & Wachter-Schutz, 2006). Arguably, FW growth occurred because of the convergence of obstacles and priorities in FW site development (Cohn & Crist, 1995; Fleming, Christenson, Franz, & Letourneau, 1996). One obstacle was the decreasing number of traditional FW sites (Cohn & Crist, 1995). Concurrently, a priority emerged as faculty identified the need for new opportunities for students to practice outside of the medical model in community-based settings (Farrow, Gaiptman, & Rudman, 2000; Johnson et al., 2006; Rydeen, Kautzmann, Cowan, & Benzing, 1995). Novel practice and FW settings evolved to solve the problems and address the opportunities facing the profession. Fortunately, occupational therapy educational standards give educators great flexibility in establishing student learning opportunities for FW, particularly FW I, where the general goals are to increase the students' comfort levels with the FW experience and to introduce them to the occupational therapy process (American Occupational Therapy Association [AOTA], 2012).

Occupational therapy faculty have arrived at a new growth opportunity that has also arisen from the confluence of priorities and obstacles, this time in research. Despite the fact that research funding is reduced and more competitive, faculty in many academic environments still desire and are required to generate new scholarship and research (Scott, Justiss, Schmid, & Fisher, 2013). Finding feasible and economical methods for stretching available monies is instrumental in ensuring that science continues to move forward. Add to this obstacle the priority to develop human capacity for clinical and academic researchers so that our profession can fulfill our research agenda (AOTA, 2011; Bear-Lehman, 2012). The possibilities for building a cadre of researchers while also overcoming reduced funding support for projects by using students in our research are emerging and are evidenced in professions outside of health care (Fuller, Mellor, & Entwistle, 2014; Hill, Woodland, & Spalding, 2004; Walsh, Larsen, & Parry, 2014).

Complimentary to this idea, entry-level students are required to learn research-related concepts (AOTA, 2012). Academic programs meet these objectives for entry-level students through a variety of methods. Students are frequently involved in faculty-driven research projects in their coursework, through blended research and service learning projects, or through collaborations between universities and clinics (Bloomer, 1995; Gitlow & Flecky, 2005; Lattanzi & Pechak, 2011). However, FW opportunities seated in intervention research programs are a novel method for providing hands-on opportunities to employ classroom knowledge about research at a practical level (Fuller et al., 2014). While innovative FW is intriguing, we must also monitor new FW experiences so that the quality of the experience is not compromised and student perceptions of the professional growth that they can achieve through innovative experiences are similar to traditional experiences (Lewis, 2005).

Given the novelty of intervention research-based FW I, we resolved to (a) examine the feasibility and describe the process of creating an

intervention research-based FW I experience and (b) explore differences in student ratings of skill performance opportunities in select ACOTE standards between students who chose an intervention research-based FW I and students that chose a traditional FW I. We hypothesized that the students choosing an intervention research-based FW I experience would report no quantitative differences in the opportunity for skill performance when compared to students in a traditional FW I experience.

Methods

We used a cross-sectional design to examine the differences in student evaluations of the opportunity for skill performance in FW I between a group of students completing a research-based FW I and a group of students in traditional FW I sites offered by our occupational therapy program. All of the students completed a quantitative survey and a reflection paper at the end of their FW I rotation. The university's Institutional Review Board approved the study.

Participant Recruitment

Five students from a first-year occupational therapy cohort (N = 24) were needed to complete a summer, faculty-driven intervention research project. We used the AOTA FW data form to explain the rotation to our students (AOTA, 2012). All available FW sites complete this form and students use the information from the form to make decisions about choosing sites. On the FW data form, educators report theoretical approaches used on the site, the types of patients seen, the number of students typically present, supervisory style, and the availability of housing and stipends during placement. For this intervention research experience, the first author described the FW I experience as an "intense four-week research experience during which a real research study will occur." The aim of the intervention study was to examine the feasibility and outcomes of the Skill-Building through Task-Oriented Motor Program (STOMP) intervention, a program designed to improve activities of daily living in people with mild to moderate dementia living in the community. The students would participate in the delivery of the STOMP intervention using theoretical frameworks, such as learned non-use phenomena, motor learning, and task-specific training. The intervention research-based FW I was described week-by-week so that the students understood they would have 1 full week of training, 1 week of evaluation and setting up the intervention, and 2 full weeks of implementing the intervention on site at the college. The FW data form indicated that the faculty member would split supervision time between five students but that one-on-one feedback would occur. The faculty member notified students that a stipend would be associated with the experience if funded. Notification of funding came after students selected the sites. Five students signed up for the experience and all agreed to participate in this study.

Procedures

The faculty member requesting student engagement (first author) approached the program's Academic Fieldwork Coordinator (AFWC) (second author) about the potential of offering students a unique FW I position in faculty-directed research. The faculty members reached consensus about an

opportunity that fell in their scope of preparation and practice. For each week of the 4-week rotation, the first author mapped out the schedule from 8 a.m. to 5 p.m.

In Week 1, we scheduled 40-hr certification training in delivering the STOMP intervention for improving activities of daily living in people with mild to moderate dementia (Ciro, Dao, et al., 2014; Ciro, Hershey, & Garrison, 2013; Ciro, Poole, Skipper, & Hershey, 2014). The STOMP intervention structures the delivery of task-oriented training of meaningful daily occupations through motor learning and neuroplasticity principles. The STOMP intervention certification requires attendance in didactic training, passing a knowledge-based postcourse test, and appropriate delivery of the intervention as reviewed by video performance. The didactic training consists of education in (a) dementia (types, symptoms); (b) outcome measures (Canadian Occupational Performance Measure [COPM], Goal Attainment Scaling [GAS], Caregiver Burden Scale, and behavioral logs); (c) the six active elements of STOMP; (d) available assistive technology for people with dementia; (e) protocol adherence, including threats to a successful intervention; (f) neurobehavioral symptoms and pathways for management; and (g) caregiver training methods. Pedagogical education strategies included didactic lectures, active learning through role-playing, and practice of the STOMP intervention with people with mild cognitive impairment in the labs in which they would do the training. We videotaped each student delivering the STOMP intervention to a person with mild cognitive impairment and then

watched as a group to analyze adherence to the active ingredients of the STOMP intervention, which include meaningful goal setting, blocked practice, repetition, errorless learning, verbal praise, and maintenance of a therapeutic relationship.

Week 2 of the FW I experience consisted of students going out in pairs to do the outcome assessments in the home. We chose to do assessments in the home to evaluate occupational performance in the natural environment. We delivered the intervention in the clinic because the students needed direct supervision to deliver occupational therapy intervention. We further reasoned that this method approximates clinical practice where patients receive training in the clinic but translation of training to the home environment is expected.

During the assessment, the students videotaped the participants performing the COPM goals. The students brought the videos back for review with the faculty member so that we could collaboratively develop potential outcomes using GAS, order necessary adaptive equipment, and set up their intervention stations. The interventions occurred in the faculty member's lab called the Occupational Performance Laboratory (OPaL). OPaL is an 880 square foot lab designed to look like an apartment with a functioning kitchen, bedroom, bathroom, living room, and office space. In addition, we used a second lab generally used for education. It contains a kitchen, bedroom, and bathroom space.

In the third and fourth weeks, the students completed the intervention phase of the STOMP. Each STOMP participant received 3 hr of therapy a

day, 5 days a week for 2 weeks, in either the morning or the afternoon per the STOMP protocol (Ciro, Dao et al., 2014). We detail the daily routine to provide the social and temporal environment established for the students. In the first hour of the day, the occupational therapy students prepped their stations, practiced and reviewed questions with the faculty member, and greeted the participants. From 9 a.m. to 12 p.m., the students completed the STOMP intervention with the morning participants. The participants and students received ten-min breaks each hour per the STOMP protocol. From 12 p.m. to 1 p.m., the faculty member and the students ate lunch together and discussed the progress of the day. The students worked with their second participant of the day from 1 p.m. to 4 p.m. Finally, from 4 p.m. to 5 p.m., the students made sure that the participants with dementia returned to their cars safely, and then cleaned their stations, completed daily documentation, and completed peer checks of each other's documentation with a goal of "no missing data." In the absence of a research participant, the students completed paperwork, spent time modifying their programs, and completed other administrative projects for the research program.

Student supervision occurred intermittently throughout the day using visual checks and in-room monitoring. The faculty member provided hands-on demonstration of techniques as needed. Each student received an individual assessment of progress on self-identified goals and project objectives in weekly one-on-one sessions. At the end of the 4 weeks of the FW I, the faculty member provided each student with a final written review of

strengths and areas of improvement for his or her next clinical. Because the faculty member received funding for this STOMP study, students received a $2000 stipend for service as interventionists as well as mileage reimbursement for travel to and from the participants' homes.

Students that choose the non-research FW I engaged in a variety of FW I experiences, which included traditional hospital and outpatient therapy settings for adult and pediatric patients. We did not attempt to structure or influence those experiences beyond what is normal for this level of FW education. Of note, our AFWC requires that all students deliver a COPM and establish an occupation-based treatment plan on FW I.

Outcome Measures

We modified an existing FW survey developed previously by our AFWC. Typically, FW educators complete this survey to assess student performance using "B" standards from the Accreditation Council for Occupational Therapy Education (ACOTE) Standards (AOTA, 2012). We modified this survey so that each student could reflect on his or her own opportunity to perform these skills. As an example, we changed the question from a FW educator perspective, "uses occupation for evaluation and intervention," to a self-reflective perspective, "I had the opportunity to use occupation for evaluation and intervention." The Appendix reflects the 21-item survey and the emphasis on four core standards of professionalism, professional reasoning, use of sciences, and experiential learning. Each standard was examined through five questions, except for professional reasoning which had six questions. The students

were asked to rate their ability to practice skills under each standard on a scale of 1-5 where 1 = *never*, 2 = *seldom*, 3 = *sometimes*, 4 = *often*, and 5 = *consistently*. Each student that completed a FW I, regardless of site type, completed this pen and paper survey at the end of the rotation and submitted it with other FW documents. The authors have not used this scale previously and have no known psychometric properties to evaluate the scale's validity and reliability.

In addition to completing the survey, all of the students in both groups wrote a reflection paper. The AFWC asked the students to write a 1-2 page reflection paper with the following directions: "Select a clinical experience that taught you something new about practice so that your subsequent practice has been changed or been transformed in some way." In the paper, the students were to describe the context, how they were thinking and feeling, and what they felt they learned from the experience. The students participating in the research-based FW I were also asked to write one extra paragraph answering, "What was it like to be in a research-based FW I experience?"

Data Analysis

Descriptive statistics were used to examine the student sociodemographics. A t-test assuming unequal variance was used to compare age between the groups. Fisher's exact tests were completed to examine differences in gender and race. We described central tendencies of the data using medians for each question. To examine differences in survey responses, we first summed the median score for each question to attain a total score for

each of the four survey domains. We compared between group differences in total median scores using the Van der Waerden two-sample test, which is used when normality assumptions are not met (Sheskin, 2003). A priori significance was established at $p < .05$. SAS 9.2 (Cary, NC) was used to analyze data.

The authors read the reflection papers of the students in the research-based FW I and categorized their comments by the four core standards in the survey. We then looked for comments that either supported or refuted quantitative survey findings and choose representative statements to describe student experiences.

Results

All of the students had just completed the first year of their professional master's of occupational therapy program. Five students participated in the research-based FW I and 19 completed a traditional FW I. The mean age of the students participating in the research FW I experience was 32.8 years (range: 24-44 years), and the mean age of the students participating in the traditional FW I experience was 25.9 years (range: 23-33 years). Eighty percent (4/5) of the students participating in the research FW I experience were female; all were white. Eighty-nine percent (17/19) of the students participating in the traditional FW I experience were female; all were white. Age differences were not significant ($p = .17$).

Of the 21 individual questions on the survey, the students in the research-based FW I generated a median score of "5" on all questions except for those falling under the standard of "use of sciences" which generated a median of "4." The students in

the traditional FW I generated a median of "4" on 10 of 21 questions and "5" on 11 of 21 questions. The students in the research-based FW I reported significantly more skill performance opportunities than traditional FW I students in areas of professionalism ($p = .03$), professional reasoning ($p = .02$), and experiential learning ($p = .04$). Use of sciences was not significantly different between the groups ($p = .17$).

Results of the reflection papers of the research-based FW I students yielded a variety of unanticipated, positive responses that corresponded to standards measured in the survey. In the first set of questions, the survey addresses the standard of professionalism. One question asked the students if they had the opportunity to articulate and understand the value of occupation-based practice. A student who worked with an older male on using a cell phone wrote quotes from his participant's spouse in his reflection paper that seemed to reflect his understanding of this standard. She [participant's spouse] said "this means the world to us that he is able to now keep in touch with his children again…because of this, he will be able to do more with them than he [participant] ever thought possible." The student wrote, "this interaction captures the quintessence of what occupational therapy is about."

In the second set of questions in the survey, we examined standards that fall under professional reasoning. In one question, the students are to report if they had opportunities for analyzing activity and using occupation in intervention. We found examples of these opportunities in the student reflection papers. One student that was working

with a participant on sorting his pills into a medication reminder system ran into difficulty with his ability to pick up the small pills. In her reflection paper she wrote, "he had large fingers and was dropping the pills….which led to frustration…I wanted to find a way to make it easier for him….after thinking about the problem, I decided a pill tray would work…I tore the covers off of CD cases and it worked to help him scoop the pills…being a good OT means thinking outside of the box."

A third standard addressed in the survey was use of sciences. In these questions, the students reported on the opportunity to use foundation science, as well as to appreciate the influence of social conditions in choosing and engaging in occupation. None of the students specifically addressed foundation science in their reflection paper, but one commented on the connection between social roles and the choice of goals in therapy. "She chose sewing [as a goal] because she was a seamstress and that was how she provided for her family."

Finally, in the fourth standard of experiential learning, student comments were specific to both the experience of learning research and opportunities to practice professional skills discussed in class. In the comments that underlie experiential learning of research, one student wrote that she learned a great deal in one month "about research, about working with a team, and about myself." Another student admitted apprehension about a research FW I and the potential for "missing opportunities" in more traditional settings. She revealed that her experience gave her opportunity to

witness "behind the scenes" activity that underlies evidence-based treatments and that she "enjoyed feeling a part of something bigger than me that may shape the way OTs and other professionals work with patients." Another commented that she now understood more explicitly that "without research, there is no advancement in the way patients are treated." In comments related to practicing professional skills, an astute student focused on the skill of therapeutic use of self. She began first with being concerned that this would not be possible with people with dementia: "I wondered how this would be possible while working with people diagnosed with dementia…they may not remember me or what we talked about every day." She continued by saying "on the first day [of the intervention], he didn't remember me, but by the end of the day, we seemed to have the same connection we gained on the first day." She went on to comment that her relationship with the first patient was different than her relationship with the second patient but that that experience is normal. "I also realize that I will connect differently to different people, but it is the connection that is important."

Discussion

We set out to examine the feasibility and describe the process of creating a research-based FW I experience and to explore differences in how students in an intervention research-based FW I would rate skill performance opportunities compared to those in traditional FW I experiences. We found that developing an intervention research-based FW I was feasible and achievable based on our specific project and resources. The students

who chose the intervention research-based FW I reported more opportunities for skill performance in professionalism, professional reasoning, and experiential learning, as compared to those in traditional FW I settings. The students' reflection papers seemed to support objective findings.

In our first objective, we set out to describe the feasibility of completing an intervention study using FW 1 students as interventionists. In our case, we found that it was possible to deliver a high intensity, short duration intervention using resources both in our college and through seed grant funding. Certainly, other faculty may be able to reproduce this model, particularly for those doing pilot projects with a limited number of participants. Examples of using FW opportunities to expand faculty-driven research are found in the physical sciences literature and support both our structure and our intent to increase research-based knowledge (Fuller et al., 2014; Hill et al., 2004). Much like our model of didactic training followed by supervised research experiences, Hill et al. (2004) noted that 80% of their students rated the lectures as a necessary foundation for the hands-on research and 90% highly valued the hands-on research experiences (Hill et al., 2004). Fuller et al. (2014) found that student engagement in faculty-driven research added value to their degree and significantly improved their understanding of research methodology (Fuller et al., 2014). Many new investigators competing for shrinking research funding may also be able to increase research productivity using this type of model.

In our continued examination of feasibility, we thought it important to comment on other

aspects of feasibility, such as participant (student) acceptance and timing of the FW rotation in the creation of a research-based FW I. In their reflection papers, this small group of students reported a greater appreciation for research after this experience. The students commented that they more fully understood the need for research and were excited about the opportunity to be a part of something "larger," which suggested that the students accepted the research process positively. In comparison literature, studies involving occupational therapy clinicians engaged in research reported a higher level of acceptance of research after involvement in a trial. For example, they reported a better understanding of the research process and all that is entailed to complete a project (Finlayson, Shevil, Mathiowetz, & Matuska, 2005). Furthermore, clinicians reported a better understanding of the rationale for following an intervention as directed by a research article after participating in intervention research. These studies support the opinion that direct involvement is experienced positively and may be the best remedy for removing negative perceptions of research (Beltran, Scanlan, Hancock, & Luckett, 2007).

Another aspect of feasibility in program development is the timing of when to expose students to a research-based FW I opportunity. In our case, we chose a FW I to match our occupational therapy intervention study design. However, other allied health professionals have specifically examined the timing of FW on modifying negative attitudes about specific populations (Beltran et al., 2007). Some have found that early experiences have the greatest impact on

changing attitudes (Procter & Hafner, 1991), while others have found that later experiences are more important (Gilbert & Strong, 2000; Madianos, Priami, Alevisopoulos, Koukia, & Rogakou, 2005). Regardless of timing, it has been suggested that FW experiences do influence eventual job placement choices (Crowe & Mackenzie, 2002). We believe that research-based FW I has the potential to break early misconceptions about research. It may also prime students who might not see themselves as future researchers for post-professional education (Bear-Lehman, 2012).

In the second aim of our study, we set out to examine the hypothesis that students would find that an intervention research-based FW I provides equivalent skill opportunities in the ACOTE standards we examined when compared to a traditional FW I. It was surprising to find that students reported more opportunities for skill development in an intervention research-based FW I in three of the four ACOTE standards examined. Of interest, the students experienced no significant between-group differences in questions related to the standard of application of science in their FW environments. Arguably, students in traditional FW I experiences seeing people with a variety of diagnoses would report many opportunities to apply science knowledge, and we were satisfied to discover that the research students seeing only one type of patient also reported positive use of sciences knowledge. These findings support our assertion that a research-based FW I with a specific diagnostic population does not disadvantage opportunities to practice entry-level skills in FW I.

In comparing our findings to other research, students in other non-traditional FWs also reported positive perceptions in personal development, creativity, and the chance to experience unique learning opportunities (Farrow et al., 2000; Gat & Ratzon, 2014; Martin & Edwards, 1998). We link part of our positive response to structuring our FW as a group-based model that is frequently used in studies of non-traditional FW settings (Avi-Itzhak & Kellner, 1995; Farrow et al., 2000; Martin & Edwards, 1998; Mason, 1998). Because of the social and temporal environment we created, our students had opportunities to interact and share with one another and were aware that they were collectively working toward a larger goal— examining the efficacy of an intervention. Students in other group-based models report the value of working collaboratively with peers, engaging in independent problem solving, and being in an enjoyable environment with peers (Farrow et al., 2000; Martin & Edwards, 1998). In fact, peer support has been reported as the most important strength of group-based FW (Martin & Edwards, 1998). Collectively, these studies may support our findings that students can positively experience a research-based FW I, particularly if structured through collaborative learning models, such as one faculty member with more than one student.

In summary, as entry-level educators, we face multi-faceted challenges in producing research with shrinking research funds, while also providing our students with the types of FW experiences that will prepare them to meet the needs of the practice and research community. We may be able to build educational models that not only support our

scholarly agenda, but also influence our students' perceptions of research in support of evidence-based practice and future research careers (Finlayson et al., 2005; Stern, 2005). Engaging students in our own faculty-directed intervention research may then help to overcome the obstacle of reduced funding while addressing our profession's priority of increasing our human capacity for research.

Limitations and Future Studies

The reader should interpret these results in light of the study limitations. First, the sample size was small and specific to one cohort of homogenous students. Different cohorts with variable sociodemographic backgrounds and previous life experiences may respond differently. Also, students with more financial need may have chosen this experience, as we relayed the potential for funding at the time they volunteered. Second, we developed the outcome tool specifically for this project, and it lacked psychometric properties to consider for interpretation. Researchers need to complete future studies on larger and more diverse samples of students and research projects that do not so closely align with practice. Also, we need to examine student or graduate perceptions of FW who chose both traditional and non-traditional FWs to ascertain if later they felt disadvantaged by a research-based FW.

Conclusions

It was feasible to develop and implement a FW I rotation with a pilot study examining an occupational therapy intervention. A small group of FW I students who engaged in the faculty-driven research FW I reported more opportunity for skill

development than peers in traditional FW I settings. Exploring opportunities for using students in faculty-driven research may provide experiences that assist both faculty and students.

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Appendix

Student Evaluation of Skill Opportunity on Fieldwork I

Students: Please rate your opportunity to practice each item using the following rating scale:

1 = *Never*, 2 = *Seldom*, 3 = *Sometimes*, 4 = *Often*, 5 = *Consistently*

I. Professionalism	II. Professional Reasoning	III. Use of Sciences	IV. Experiential Learning
1. I had the opportunity to use professional oral and written communication skills. 2. I had the opportunity to describe the meaning and dynamics of occupation and purposeful activity. 3. I had the opportunity to articulate to clients and families the unique nature of occupation and its value for the client. 4. I had the opportunity to apply knowledge of the AOTA Code of Ethics, Core Values, and AOTA	1. I had the opportunity to use occupation-based, client-centered professional reasoning. 2. I had the opportunity to analyze activities relative to performance areas, performance components, and performance contexts. 3. I had the opportunity to utilize occupation for evaluation and intervention. 4. I had the opportunity to use the COPM and other standardized and non-standardized assessments according to appropriate procedures.	1. I had the opportunity to apply knowledge of the structure and function of the human body to include the biological and physical sciences and concepts presented in semesters 1-3. 2. I had the opportunity to apply knowledge of human development. 3. I had the opportunity to apply knowledge of the concepts of human behavior to include the behavioral and social sciences. 4. I had the opportunity to appreciate the influence of social conditions and the ethical context in which humans choose	1. I had the opportunity to use safety precautions with clients and families during screening, evaluation, planning, and intervention processes. 2. I had the opportunity to use principles of time management, including being able to schedule and prioritize workloads. 3. I had the opportunity to maintain and organize treatment areas, equipment, and supply inventory. 4. I had the opportunity to participate actively and positively in the supervisory

I. Professionalism	II. Professional Reasoning	III. Use of Sciences	IV. Experiential Learning
Standards of Practice as guides for professional interactions. 5. I had the opportunity to learn personal and professional competencies related to responsibilities at the assigned fieldwork setting.	5. I had the opportunity to document occupational therapy services according to the University of Oklahoma Health Sciences Center and facility guidelines. 6. I had the opportunity to use professional literature to make informed practice decisions.	and engage in occupations. 5. I had the opportunity to apply knowledge of basic science, rehabilitation, and occupational science concepts to supervised occupational therapy practice.	relationship with the fieldwork educator and academic fieldwork coordinator. 5. I had the opportunity to reflect on my personal and professional abilities and competencies related to responsibilities at the assigned fieldwork setting.