

Nurturing the Prepared Mind: Research During Level II Fieldwork

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Importance: Level II fieldwork is one of the last opportunities for students to learn from clinicians modeling how to gather practice-based data for research before independent practice.

Objective: To identify options for incorporating active research opportunities in the Level II fieldwork experience and the barriers that preclude these opportunities.

Design: Approximately 575 electronic surveys (QuestionPro), consisting of 31 questions, distributed to fieldwork sites.

Participants: A convenience sample of fieldwork educators and clinical fieldwork coordinators recruited from sites in several states.

Outcomes and Measures: We hypothesized that the main obstacles to providing Level II fieldwork students with research experience were a lack of time resulting from productivity pressures and fieldwork educators' belief that Level II fieldwork should primarily focus on mastering clinical skills.

Results: One hundred thirteen surveys were started, and 95 were completed. Most respondents reported that Level II fieldwork students would benefit from participation in research. However, only two fieldwork sites with occupational therapists involved in research intentionally coordinated Level II fieldwork students in an active research opportunity. Clinical responsibilities and the lack of current experienced investigators at the fieldwork site were the most significant barriers to these opportunities.

Conclusions and Relevance: Fieldwork educators identify ways for Level II fieldwork students to participate in research but typically do not have time or resources to eliminate identified barriers to research participation. Lost opportunities to participate in research in Level II fieldwork must be addressed to promote greater research inquiry in the future occupational therapy clinical workforce.

What This Article Adds: The article adds to the literature describing the barriers to student participation in research activity during Level II Fieldwork and the types of research activity occupational therapy students participated in during a 12-wk rotation.

Developing a good clinical research question, learning research methods, participating in data collection, critically appraising research techniques and results, and translating research findings to guide practice are important skills all occupational therapy students learn in the classroom. Evidence-based practice (EBP) is highlighted in several Accreditation Council for Occupational Therapy Education (ACOTE[®]; 2018) standards and is embedded throughout most occupational therapy curricula. Academic educators are essential occupational therapy student mentors who provide initial instruction in EBP habits through multiple course assignments (Cohn et al., 2014; Lin et al., 2010). Intentional academic training in EBP skills ideally translates to using the same skills in practice.

Fieldwork is the first opportunity for occupational therapy students to learn the meaning of academic content in context: choosing the ideal outcome measures, assessment procedures, and clinical skills on the basis of the most current research evidence. Fieldwork educators have reported that one of the most significant benefits of working with fieldwork students is staying current with the latest research informing best practice (Roberts et al., 2015). The American Occupational Therapy Association (AOTA; 2002) Fieldwork Performance Evaluation requires Level II fieldwork educators to evaluate Level II fieldwork students' ability to access and assess the published research that supports their outcome measure choice and their intervention plan.

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Typically, assignments related to EBP during Level II fieldwork include literature searches, conducting a journal club, or presenting an in-service educational lecture (Costa, 2015) rather than opportunities for active research experience. The AOTA Fieldwork Performance Evaluation does not evaluate Level II fieldwork students on research method skills, such as following a research protocol, data collection, or analyzing data.

In her 2016 Eleanor Clarke Slagle Lecture, “The Prepared Mind,” Garber (2016) stated that students’ preparation for competency in research should be nurtured. Garber described the prepared mind as the force behind scientific inquiry and the development of evidence-based solutions. A person with a prepared mind displays courage, persistence, curiosity, flexibility, self-awareness, and initiative and is organized, systematic, precise, and consistent (Garber, 2016). Nurturing a prepared mind starts in the didactic phase of a student’s education and continues during fieldwork. Level II fieldwork is one of the last opportunities for clinicians to model how to gather practice-based data for research before students move to independent practice.

No studies have examined the involvement of Level II fieldwork students in research. The goal of this study was to determine the opportunities for incorporating research into the Level II fieldwork experience and the barriers that preclude these opportunities.

Method

The research questions were as follows: Do Level II fieldwork students have the opportunity to participate in research? If so, which types of research activities are fieldwork sites including in the Level II fieldwork education experience? If not, what are the barriers to offering Level II fieldwork students research opportunities?

We hypothesized that the main obstacles to providing Level II fieldwork students with research experience may be lack of time as a result of productivity pressures and fieldwork educators’ belief that Level II fieldwork should focus on the mastery of clinical skills rather than research skills.

Research Procedure

Subjects were contacted via an email that contained a link to a 31-question survey developed with an online survey software tool, QuestionPro (SurveyAnalytics LLC, San Francisco, CA). All questions were developed and reviewed by the authors, a team of occupational therapists that included an occupational therapist in outpatient rehabilitation, an academic fieldwork coordinator, a program director, and two occupational therapists whose primary focus is research. The survey consisted of open-response, multipoint scale, drop-down menu, and multiple-choice questions, and participants took an average of 5 min to complete it.

The survey was designed with question logic, allowing respondents to advance to questions depending on their previous response or role in fieldwork. If research was not being conducted at the respondent’s facility and the respondent was a non-occupational therapy fieldwork coordinator, then the survey ended for that respondent. If the respondent indicated that occupational therapists were participating in research at their facility, then the respondent was asked whether that person had coordinated a Level II fieldwork experience in which active involvement in research was an intentional component. The survey questions also addressed the desire for participation in future research and the existing opportunities for and barriers to research engagement, both for the respondent and for future Level II fieldwork students.

The survey’s face validity was examined by having two fieldwork educators review and take the survey to analyze whether the questions would elicit data about Level II fieldwork student research activity. Both fieldwork educators who tested the survey (Clark and Dapice Wong) reported that the questions flowed easily and that the survey questions addressed the purpose of the study. Sample survey questions are shown in Figure 1.

Participant Recruitment

A convenience sample of fieldwork educators and fieldwork coordinators was recruited from sites that have student affiliation agreements with Touro College in New York State and Western Michigan University in Kalamazoo.

Figure 1. Sample survey questions.

Sample Survey Questions:

- **Please describe the occurrence of research at your facility. (Select one)**
 - Research is currently being conducted at my facility.
 - Research is currently being conducted and has been conducted the past 5 years.
 - Research has been conducted in the past five years at my facility.
 - Research is not currently being conducted.
- **Have you ever coordinated a Level II occupational therapy student placement into research that is being conducted by occupational therapists at your facility? (Select one)**
 - Yes
 - No
- **What are the challenges to placing an occupational therapy fieldwork student into research opportunities at your facility? (Open response)**

Participation in the survey was voluntary. The Human Subject Institutional Review Board at Western Michigan University determined that approval was not required to conduct this research because personal identifiable information was not collected.

Responses were collected over 34 days. A follow-up email reminding participants to complete the survey was sent 3 wk after the initial email.

Data Analysis

The survey results were generated as a Ques-

tionPro report. The quantitative data were presented as percentages, and the qualitative data were presented as free-text open responses. QuestionPro software provides basic frequency calculations in a summary report, and infographics provide a graphic visual display of survey results. Both quantitative and qualitative data were analyzed for themes and trends in research activity.

Results

Participants

Five hundred eighty-four emails were sent to fieldwork site contacts. Of 113 surveys that were started, 95 were completed, for a response rate of 16% and a completion rate of 84%. Survey respondents were anonymous. Uncompleted surveys were excluded from this analysis. Of the 95 surveys completed, 50% of respondents identified themselves as working in Michigan; 30% in New York; 7% in Illinois; 6% in Colorado; and 1% each in Massachusetts, Indiana, Virginia, Tennessee, Ohio, New Jersey, and Minnesota. Participants included occupational therapists who were Level II fieldwork educators (46%), combined Level II fieldwork educators and clinical fieldwork coordinators (32%), clinical fieldwork coordinators (10%), and non-occupational therapist fieldwork coordinators (12%). No occupational therapy assistants completed the survey. Participants worked in the following settings (Table 1): general rehabilitation outpatient (16%), inpatient acute rehabilitation (15%), inpatient acute care (14%), schools (11%), subacute rehabilitation or skilled nursing facilities (8%), pediatric community settings (5%), pediatric outpatient clinic (5%), and other settings or a combination of several settings (26%).

Research Activities

Most respondents (53%) reported that research either is currently being conducted at their facility or has been conducted in the past 5 yr (Figure 2). Of the respondents at whose facility research is being conducted, 60% reported occupational therapist involvement in that research (Figure 2). Fifteen percent of respondents (two sites) who reported that occupational therapy research was being performed at their facility said that they intentionally coordinated research participation opportunities for a Level II fieldwork student's rotation (Figure 2). These practice settings were an inpatient acute rehabilitation facility and an inpatient psychiatric unit. Settings at which research was conducted but at which students were not intentionally coordinated into research opportunities included four inpatient acute care sites, two general outpatient rehabilitation sites, and five other settings: school system, inpatient psychiatric unit, community pediatric site, subacute rehabilitation, and outpatient hand therapy. Non-occupational therapist respondents did not advance beyond these questions. All other participants, however, advanced to questions that probed what involvement they had in research at their facility, if any.

Survey participants identified the following ways in which Level II fieldwork students have been involved in research activities at their facilities (Figure 3): data collection (28%), data analysis (15%), providing or implementing a standard

Table 1. Primary Practice Setting of Survey Respondents

Type of Setting	Respondents Per Setting Type, <i>n</i> (%)
General rehabilitation outpatient	15 (15.79)
Inpatient acute rehabilitation	14 (14.74)
Inpatient acute care	13 (13.68)
Schools	10 (10.53)
Subacute rehabilitation or skilled nursing facility	8 (8.42)
Pediatric community	5 (5.26)
Pediatric outpatient clinic	5 (5.26)
Outpatient or hand private practice	4 (4.21)
Inpatient psychiatric	4 (4.21)
Outpatient hand	3 (3.16)
Multiple settings	3 (3.16)
Behavioral health community	2 (2.10)
Home health	2 (2.10)
Pediatric hospital outpatient	1 (1.05)
Older adult community living	1 (1.05)
Adult day program for developmental disabilities	1 (1.05)
Older adult dementia day program	1 (1.05)
Long-term acute care	1 (1.05)
Secure juvenile detention facility	1 (1.05)
Preschool or early intervention	1 (1.05)

Note. Percentages do not total 100 because of rounding.

research protocol (15%), principal or co-investigator (13%), writing the manuscript (13%), presenting results of research at a meeting (10%), and unsure (5%). Of the 14 respondents who reported students were involved in either their research or that of other occupational therapists at their site, 36% ($n = 5$) indicated that student involvement in research was required by the fieldwork program; of those same respondents, 21% ($n = 3$) also indicated that engagement in research activities was a fieldwork site requirement.

Some participants indicated that research was being conducted at their facility but that they had not been or were not involved in this research; of these, 31% had a moderate interest in being involved in research, 14% had a slight interest, and 13% had a high interest. The factors promoting participation in research included mentoring or guidance from research experts (31%), grant funds (23%), support from

administration (23%), support from the immediate supervisor (16%), and other (7%). The current challenges to participating in research included workload and productivity standards (44%), lack of experience in research (31%), funding availability (22%), and other (3%).

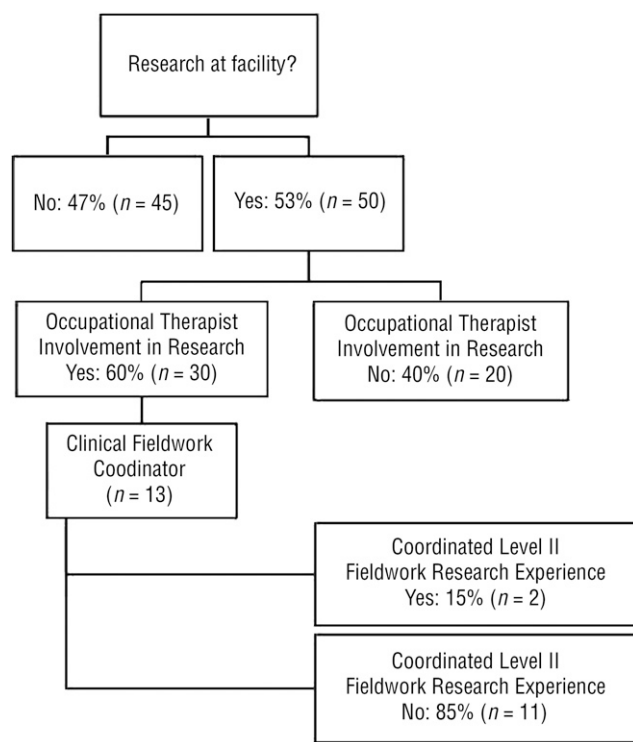
Most survey respondents (81%) reported that having Level II fieldwork students participate in research is beneficial to the student, the site, or both. Survey participants (19%) who did not believe it was beneficial to have Level II fieldwork students participate in research listed reasons with similar themes: The 12-wk experience should focus on mastery of clinical skills before learning research skills, the 12-wk period is already too short for practical skill acquisition related to patient assessment and treatment, and teaching research skills may be more appropriate in a doctoral experiential component. Occupational therapists who had not involved Level II fieldwork students in their research indicated that the barriers or challenges included clinical responsibilities (53%), lack of current experienced investigators at the fieldwork site to mentor students (18%), and other barriers (29%), including timing of research and planning and collaboration with programs.

When participants were asked how they would incorporate research opportunities into a Level II fieldwork experience in the future, 9 participants were not sure how to start. Other participants listed the following ideas: data collection, data analysis, find research articles and lead a discussion with the team about the articles, complete a single case study, have the student provide a hands-on intervention currently being researched at the facility, complete an initial literature review, complete assignments related to EBP for treatment, and complete grant applications.

Discussion

The goal of this study was to determine the opportunities to incorporate research into the Level II fieldwork experience and the obstacles to those opportunities. The barriers and opportunities identified in this study can be categorized in four related areas—individual, educational, environmental, and institutional—similar to those described by Grenier (2015). *Individual factors* are the personal attributes of the fieldwork coordinator or educator, and *institutional factors* can be

Figure 2. Survey question flow chart.



categorized as the external institutional context that may influence learning during fieldwork education (Grenier, 2015). *Environmental factors* are attributes of the physical site at which Level II fieldwork education is occurring, and *educational factors* are those that relate to individual teaching styles and methods (Grenier, 2015).

Individual and Environmental

An environmental barrier noted by respondents was a lack of experienced investigators to mentor students at fieldwork sites. This environmental barrier related to the individual barriers identified in our study, which were that a lack of experience, and thus a lack of confidence in skills, was a challenge to participation in research.

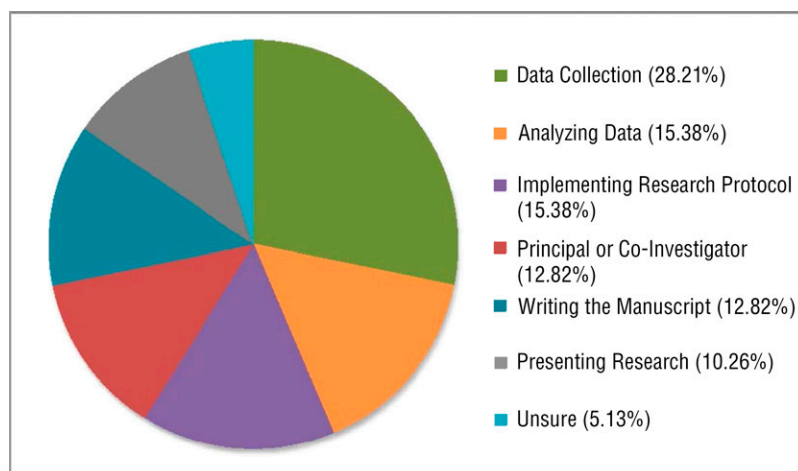
An extensive systematic review of current literature related to occupational therapists' research utilization and EBP habits (Thomas & Law, 2013) found that decreased confidence in research skills, including appraising and implementing research, is a barrier to participation in EBP. Thomas and Law (2013) reported that increased training, and thus increased experience with research, led to increased confidence. In addition, Schwartz and Smith

(2015) found that student experience in a college-led intervention research project promoted skill development in content areas, increased confidence in practice skills, and improved clinical reasoning abilities and self-efficacy in research skills. Thomas and Law indicated that occupational therapists who collaborate on research projects have increased confidence and engagement in EBP routines, knowledge translation, and research utilization.

Academic programs usually want to connect with fieldwork sites for various types of research projects. Level II

fieldwork students are an easy-access bridge to connect academic researchers and fieldwork site investigators for research methodology mentorship or research project collaboration. In addition, fieldwork students are good at performing knowledge translation of published research results to share with fieldwork sites. Perhaps a better defined model of clinical research that uses fieldwork students, fieldwork educators, and academic researchers could be developed and shared in the future.

Figure 3. Types of research opportunities provided by Level II fieldwork sites.



Educational

Fieldwork education models are the systematic ways in which fieldwork

education is designed and delivered (Grenier, 2015), which varies per individual fieldwork educator and fieldwork site. Although most survey respondents understood the value of engaging the next generation of occupational therapists (i.e., the current Level II fieldwork students) in research opportunities, some survey participants believed that the focus of Level II fieldwork should be on mastery of clinical skills before research skills. This finding suggests that these participants will be less apt to facilitate Level II fieldwork students' participation in active research opportunities.

Some of the sites that involved Level II fieldwork students in research were prompted by an academic program requirement or the fieldwork site to plan an intentional learning activity related to research. Perhaps more Level II fieldwork students would be involved in active research if academic programs or fieldwork sites included such intentional assignments. However, the current Level II fieldwork ACOTE (2018) standards and the AOTA (2002) Fieldwork Performance Evaluation Tool do not require Level II fieldwork students to be evaluated on research skills; therefore, the focus of Level II fieldwork may continue to remain on clinical skills unless there are explicit ACOTE Level II fieldwork standards related to research activity exposure or engagement.

Institutional

Institutional barriers to clinical fieldwork coordinators' or educators' research engagement include clinical responsibilities and productivity demands, which are similar to the barriers of workload pressure and time that have been identified in supervising fieldwork students (Roberts et al., 2015). Fieldwork educators also reported that barriers to their participation in research included paperwork demands and lack of staff to support data collection.

Level II fieldwork students can be very helpful with both paperwork and data collection. Fieldwork educators can complete the extensive AOTA Fieldwork Educator Certificate Program (<https://www.aota.org/Education-Careers/Fieldwork/Workshop.aspx>), a 2-day course that has a section dedicated to reviewing EBP principles and the benefits Level II fieldwork students can bring during their 12-wk rotations: library database access to literature, critical appraisal of articles, knowledge translation, data collection, and assistance with research protocols. Fieldwork educators who have training in incorporating research-related and EBP projects into the 12-wk Level II fieldwork experience may naturally incorporate their fieldwork students into research opportunities.

Limitations

This study had some limitations. The survey was distributed to a convenience sample of fieldwork sites in a limited number of states, and the survey response rate was 16%. The results may not represent the opinions of therapists at other sites in other states. Because many participants work in facilities where research is or has been conducted, they may have a special understanding of or appreciation for the process not found in other facilities. Why others who were invited to participate chose not to do so, and whether those choices were related to on-the-job experience with research, is unknown.

The survey did not capture what type of training respondents had for working with Level II fieldwork students. However, no formal training is required to supervise Level II fieldwork students. Fieldwork educators can receive training from coworkers, the academic program, or internal or external continuing education courses related to fieldwork education.

The survey did not examine Level II fieldwork students' perspective, specifically students' perceived challenges and benefits related to their involvement in research. A student who has exposure to research in the academic environment may be more comfortable engaging in research opportunities or may even seek out research opportunities during Level II fieldwork rotations. A student's drive to participate in research may be fueled by an institutional program that emphasizes involvement in research.

Implications for Occupational Therapy Practice and Research

As many occupational therapy programs move toward the doctoral-degree level, including in-depth experience with and application of EBP, the importance of exposure and involvement in active research opportunities in coursework will most likely increase. The results of this study have the following implications for occupational therapy practice and research:

- Most respondents understood the value of engaging Level II fieldwork students in research opportunities. Unfortunately, not many students are participating in active research opportunities during Level II fieldwork.
- Several educational, individual, institutional, and environmental barriers exist that prevent the availability of research opportunities. These barriers must be addressed to increase opportunities for occupational therapy students to participate in research during fieldwork.

Conclusion

A Level II fieldwork experience that includes active research opportunities aligns with AOTA's 2018–2020 strategic goal objectives for meeting *Vision 2025* because it nurtures the development of advanced competence in practice (AOTA, 2017). Academic programs and fieldwork sites need to better collaborate on how to eliminate barriers and establish mutually beneficial yet manageable active research opportunities for Level II fieldwork students. Currently, there are more barriers than opportunities for these experiences. Academic–clinical partnerships have the potential to enhance the prepared mind of the future occupational therapy workforce and increase the research enterprise of the field. ■

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