

# EVIDENCE-BASED PRACTICE, INFORMATION LITERACY, AND GRADUATE INQUIRY: A COLLABORATIVE LEARNING AND TEACHING EXPERIENCE

ROSEMARY GREEN AND MARY CORCORAN

## INTRODUCTION

Given the expectation that entry-level occupational therapists (OT) will carry out evidence-based practice (EBP) competently, master's level occupational therapy programs must assure students' development of advanced skills in gathering information, appraising relevant research, and synthesizing research literature to make informed decisions about clinical practice. The Accreditation Council for Occupational Therapy Education (2006) stipulates that students be able to "effectively locate, understand, and evaluate information, including the quality of research evidence," and "use research literature to make evidence-based decisions" (p. 10). As processes, evidence-based practice and information literacy share common skills and knowledge: recognizing when information is needed; gathering, interpreting, and managing information; and using information effectively, ethically, and legally in disciplinary, professional, and other settings.

There is a natural alliance between information literacy and evidence-based practice. As Jacobs and her colleagues note, "Evidence-based practice demands an underlying understanding of how information is organized and accessed. Hence, competency in information literacy is ... essential" (Jacobs, Rosenfeld, & Haber, 2003, p. 320). This paper addresses that alliance in the context of a graduate OT research course co-taught by a graduate librarian and an OT faculty member.

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*Green* (Graduate Programs Librarian) and  
*Corcoran* (Professor of Occupational Therapy, Division of  
Occupational Therapy)  
Shenandoah University [Winchester, VA]

## COLLABORATION IN CONTEXT

The Master's in Occupational Therapy at Shenandoah University is a hybrid program; that is, a majority of the cognate content is delivered online, and students come to campus one day a week for in-class instruction, activities, and meetings. As described in the course syllabus, *Fundamentals of Scholarly Inquiry* (OT 525) is the first in a sequence of research methods courses "designed to help students merge research and OT practice across a diverse range of settings and health conditions." The course emphasizes the "use of inductive reasoning in evidence-based OT practice, introduced primarily through a qualitative approach to observations, interviews, and critical analysis of the literature."

This format facilitated a team-teaching approach, allowing us to mirror the clinical team interactions wherein occupational therapists engage. The practice of interprofessional collaboration typical among healthcare practitioners is seen in cooperative, multidisciplinary care and consulting teams (Paul & Peterson, 2001). Thus, as we began early discussions of what the course might look like, we recognized that we preferred to work as members of an interprofessional team. We viewed our collaboration as an opportunity to put to use our mutual interests as qualitative researchers, as well as our complementary expertise in designing literature-based learning activities.

The importance of establishing collaborative interprofessional relationships has long been recognized in the fields of librarianship and occupational therapy. The literature documents a trend toward increased faculty-librarian collaborations among several disciplines (Isbell & Broadus, 1995; Green & Bowser, 2003, 2006; Powell & Case-Smith, 2010). It is no coincidence that these partnerships have evolved simultaneously with the explosion of digital content,

web-based systems for managing information, ubiquitous methods of distance learning, and technologically delivered graduate education. At the same time, the role of the partnering librarian is no longer exclusively that of a guest lecturer who provides generic information literacy skills instruction. “The depth of librarian involvement is growing, from librarians teaching information-literacy instruction as an add-on, to librarians as team members or librarians in a co-instructor role” (Arp, Woodward, Lindstrom, & Shonrock, 2006, p.20). As the semester progressed, we became increasingly agile at blending our pedagogical approaches. We attempted to model interprofessional collaboration by alternately leading in-class activities and jointly reading students’ written assignments. At the same time, we took every opportunity to promote and synthesize the principles and processes of evidence-based practice and information literacy.

One of our central objectives was to provide tools (e.g., means of finding information and scholarly research; opportunities to practice with thinking critically about research) necessary for clinical reasoning, proficient clinical performance, and lifelong learning. Knowing how to become and remain lifelong learners is essential for occupational therapists; therefore, it is essential that they remain current with the literature in order to transfer new information to practice (Corcoran, 2003). Initially, our students assimilated evidence from a course reserve collection of research literature focused on disability and college students. As their research projects took shape and their research needs changed, they began independently gathering, critiquing, and writing from newer, more specialized literature.

## **INTEGRATING INFORMATION LITERACY AND EVIDENCE-BASED PRACTICE**

Evidence-based practice relies on collecting and evaluating information that “comes in many different forms and formats. Critical appraisal informs clinical decision making and application of evidence to clinical practice” (Jacobs et al., 2003, p. 322). The underlying focus of the course was just that: Students were required to find and employ evidence gleaned from research literature to inform the work they would undertake as clinical practitioners. While we emphasized rehabilitation research literature as a fundamental source of evidence, we also facilitated and encouraged students’ understanding, interpreting, and valuing multiple forms of evidence. As a result of participating in the course, they began to “synthesize evidence from a range of sources that can be applied to practice decisions, specifically collecting and interpreting interview and observation data” (OT 525 syllabus), as well as published research.

The information literacy process commences with knowing that information is needed; therefore, inquiry begins with a question that requires information. Students were given a research question that they explored in their group of five. They conducted case studies to explore the meaning of “occupation for a student with a mobility limitation” (OT 525 syllabus). They followed an inductive process of collecting information from literature, applying the information through

writing exercises such as constructing abstracts and annotations, interpreting the information, then applying it to a small research project. Students worked in small groups throughout the semester, assimilating research strategies that we integrated into their projects. The final project was a multimedia presentation describing the occupations of graduate students with mobility limitations, and drawing implications for occupational therapy. Thus, students were required to develop and combine skills in naturalistic (qualitative) research methods, information literacy, and evidence-based clinical reasoning.

## **COURSE STRUCTURE AND CONTENT**

By and large, the processes and outcomes of qualitative research and clinical reasoning are unfamiliar to first-year occupational therapy students. Many of our students were experienced with reading and interpreting quantitative research and statistical data. However, most were unfamiliar with qualitative research methods; interpretations of narrative and observation data were new to them. OT 525 immersed the students in an iterative process of literature searching, finding evidence, inductive reasoning, research-based reading and writing, and collecting and analyzing qualitative data. The students were challenged, but they acknowledged that qualitative research, with its focus on exploring patients’ stories of ability and disability, is a client-centered exploration of occupation and thus resonated with their practice as occupational therapists.

The course was delivered via Blackboard 9.1, and we used iTunes U and YouTube for lectures and class projects. Most of the direct instruction, lectures, group and individual activities, instructional materials, and discussions took place online. When we met with the class on Wednesday mornings, we used the face-to-face time for small group work on their multimedia projects. Class time was brief, so we needed to be organized and efficient so that we all moved quickly and remained actively engaged. At the same time, we left room in the semester structure of assignments, readings, and activities to respond to the students’ learning needs and adjust accordingly.

The course began with an overview of the central concepts and their interrelationships; specifically we introduced information literacy and inductive reasoning as “ways of knowing” about occupation that are necessary to evidence-based clinical reasoning. Because other concurrent courses provided more detail in the topics of occupation and clinical reasoning, we wanted to engage students in an iterative process that mirrored the naturalistic research process of collecting data through observation and interview and using the literature to shape interpretations and decisions about further data collection. Class activities and assessments were designed to build skills incrementally along three lines as described below – data collection, information literacy, and data analysis. In addition, we asked students to write weekly reflections that were designed to connect new learning tightly to occupation and occupational therapy practice.

Over the semester, students annotated three sets of research articles (two articles in a set) and shared their

information with others in their small group. In writing these annotations, students summarized the evidence regarding the experiences of graduate students with mobility limitations. At the same time, producing annotations helped the small group develop observation and interview guides to collect rich descriptions of occupational performance and meaning. They produced annotations before, during, and following data collection.

Data collection consisted of an observation, with field notes, of another student member of the small group using a mobility device (walker, wheelchair, or crutches) in the conduct of an activity typical of a graduate student (such as traveling between campus buildings or going to the library). Students analyzed the observation data and annotated their second set of articles prior to an interview with the other student group member about the experience of using the device. After analyzing the combined interview and observation data, each student was required to find her/his own literature and write an evidence-based case report of the person she/he observed and interviewed. The final task of the small group was to combine the case reports and create an evidence-based multimedia project describing the occupational meanings and performance of graduate students with mobility limitations. Thus, students were assessed based on three sets of two annotations (total of six articles), a case report, and a final multimedia project.

## REFLECTIONS AND REVISIONS

In addition to the university-initiated course evaluations, students were asked by the course instructors to comment anonymously regarding their experience with the course and suggested changes. All of the following quotes are drawn from their qualitative comments. Students reported that the course was intellectually challenging and helped them to gain "... a new appreciation for the process and flexibility in the research - how the data can be processed/collected." They appreciated our efforts to engage them in an iterative process that was authentic to their work as future therapists. As one student commented,

*In all honesty, I truly enjoyed the course and the required assignments. The three Article Annotations gave me a wealth of experience annotating articles and connecting similar pieces of work. The topics also tied in wonderfully with our other assignments and made the work fruitful. Our weekly reflective journals were helpful when processing the material and its application to the field of occupational therapy. Our collection of data (video and interview) was fun and useful. It gave us invaluable experience and allowed for collaboration within our groups and as a class - something that is very beneficial to me. Although [at the time of this posting], I have not completed the Case Report, the idea of tying in all of our gathered information seems quite useful and beneficial to us as scholars, writers, and OT students.*

Despite the workload, several students responded that they valued the course experience. One course evaluation read,

*"I really enjoyed myself in this class and learned a lot of essential information that I will be able to utilize in future courses." We were gratified that even those students who were new to or anxious about the research and writing process eventually related well with the course material. One such student noted, "I am not much on researching articles, however the set up of your class made the course challenging but very engaging and fun." At times, specific aspects of the course were named as particularly helpful; for example, one student commented, "I really liked that you addressed issues we might be having with graduate reading. I found this to be beneficial. It also helped me to relax and do something constructive about the struggles I was having."*

Students also had several suggestions for improvements, including reducing the number of annotations from six to four, dropping a requirement to submit a draft of the case report, and providing low-tech options for the multimedia project. We are considering ways to merge the case reports and final project more effectively in a collaborative assignment that is graded individually (reflecting the difficulties students have with group projects in a mostly distance education environment). Students also need a clearer understanding of the end result of the data collection, information literacy processes, and the analysis process. As one student commented, "...a better overview of how all the pieces of this course fit together and a description of the end result provided at beginning of semester would be helpful. Sometimes felt as if I was 'flying blind' because didn't have a clear picture in my head of how it all relates."

## CONCLUSION

Powell and Case-Smith (2010) are among the few who have investigated the correlation between information literacy and the steps in evidence-based practice. They write,

EBP implies that practitioners are skilled in asking clinical questions, retrieving relevant information, appraising research studies and assimilating the research information into their interventions. Practitioners with these skills not only apply interventions based on "gold standard" evidence but also provide consumers and other professional with research-based information (p. 365).

Throughout the process of designing, delivering, and modifying OT 525, we drew upon the natural synergy of EBP and information literacy. We modeled interprofessional collaboration for the students as they began to operate more comfortably as research teams. We observed them steadily developing skills in clinical reasoning, advanced information literacy, evidence-based OT practice, and conducting research informed by research literature and first-hand data collection. We continue to reflect on the course and plan for next year, convinced that the instructional elements we chose, a collaborative environment, and the integration of processes can provide a rich learning experience for all of us.

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