Journal of the Scholarship of Teaching and Learning, Vol. 24, No. 4, December 2024, pp.207-220.
doi: 10.14434/josotl.v24i4.35737

Teaching Graduate Student Practitioner-Scholars with Affordable Learning Materials (ALMs): Closing the Research-to-Practice Gap

Elizabeth M. Pope
University of West Georgia
epope@westga.edu

Phillip D. Grant
Clemson University

Abstract: The research-to-practice gap is often discussed in higher education, particularly in practitioner-oriented programs geared toward adult learners. Instructors are encouraged to design courses that support students to apply what they learn in their courses to their professional practice as "evidence-based practice." When learning about research methods, students are encouraged to consider both how to use existing research to improve their professional practice and how to conduct new research to solve problems of practice. Course content, such as readings, lectures, and videos, serves as the foundation for this activity. But which materials actually help students build this connection between the concepts in a research course, using research, and evidence-based practices in their professional lives? How do students learn from course materials to make meaning from them that can be applied outside the classroom? And how can instructors create learning environments that support these activities? In this paper, we examine these questions and present findings from a basic qualitative study examining student experiences learning about research methods in an online course that used Affordable Learning Materials (ALMs). This course was created to encourage students to apply research to solve problems of practice in their own professional lives. In using ALMs, we, as instructors, were forced to step outside traditional commercial textbooks and consider what may be more beneficial to adult learners. This case study describes a more student-oriented approach to teaching and learning research methods.

Keywords: Affordable learning materials (ALMs), research-to-practice gap, online learning, research methods, graduate education, qualitative research

The cost of postsecondary education in the United States is growing. In many cases, this growth makes higher education less affordable for students. According to the National College Attainment Network (2022), only 24% of public four-year institutions are considered "affordable," with an average gap of around $2,500 between need and financial aid. While this proportion has dropped from 29% to 24% over the past five years, universities and professors nationwide are still looking for ways to save money for their students (Coker & Glynn, 2017). One steadily growing area of cost for postsecondary students in the United States is books and supplies (Del Valle, 2019). On average, students can save around $90 per textbook if their instructors use free resources in their courses rather than commercial textbooks, making up around 20% of the gap between need and affordability (Hilton III et al., 2014).

A second major issue in higher education today is relevance (Ambrose & Wankel, 2019). From politicians to today's youth, many are questioning the value of higher education due to factors such as cost, quickly changing technology, and the emergence of increasingly human-like artificial intelligence (Brown et al., 2022). To provide students with more relevant instruction, scholars seek to bridge the so-called "research-to-practice" gap in academia (Bansal et al., 2012; Sato & Loewen, 2022). The research-to-practice gap posits that academia focuses too heavily on the theoretical and hypothetical while practitioners experience "real world" issues that formal education often misses (Benander, 2009; Korthagen, 2007).

This gap is particularly problematic in practitioner-oriented programs, such as graduate programs in the field of education (Barnhart & van Es, 2015). We teach in such programs and have taken a two-pronged approach to providing our students with a more relevant graduate education. Our goal is to improve one of the courses offered at our institution that is frequently seen by students as irrelevant to their professional lives, formally titled "Introduction to Research in the Human Sciences". This course is focused on research methods in the field of education. The first aspect of our approach was to introduce affordable learning materials (ALMs). The second was to implement pedagogical tactics that focused on our students' "real world" experiences in their field. This paper reviews what is currently known about free educational resources, including ALMs, and the research-to-practice gap. We also provide our reflections as a case study based on student work. We close with our lessons learned about the process while offering some implications for instructors.

Review of Literature: A Brief Look at OERs and ALMs in Scholarship

Our interest in improving our course began when we explored alternative means for providing instructional materials to our students. The most well-known way to provide free instructional materials to students is through open education resources (OERs; Hilton III., 2016). OERs are learning materials that instructors create to provide students with a free alternative to traditional textbooks (Hendricks et al., 2017; Hilton III, 2016; Wynants & Dennis, 2022). Some scholars have reported OER use to be an effective means of saving students money without sacrificing the quality of the educational experience (Bliss et al., 2012; Colvard et al., 2018; Delimont et al., 2016; Hilton III et al., 2014). However, OERs are not perfect. Some scholars have signaled concern about OER quality in comparison to traditional commercial textbooks (Fisher et al., 2015; Howard & Whitmore, 2020; Thomas & Bernhardt, 2018).

The most significant benefit of OER use is its reduction in cost for the student (Hilton III et al., 2014). For example, a multi-institutional community college study found that using OERs could reduce students' textbook costs by $360 per semester if they were enrolled in 12 hours of courses that used OERs (Hilton III et al., 2014). These cost savings may come with no adverse effects, too. Colvard and colleagues (2017) found that students enrolled at an R1 university who took courses utilizing OERs performed better than those who did not. Winitzky-Stephens and Pickavance (2017) similarly found that students enrolled at one community college benefitted from OERs due to their reduced cost, resulting in a higher-grade point average.

Both instructors and students report that OER use creates positive outcomes (Illowsky et al., 2016). For example, in one study of 524 undergraduate students in science, math, and education courses at Kansas State University, participants reported that OER materials were of "good quality" (Delimont et al., 2016, p. 6). However, there was a gap between student satisfaction with the course (4.8), and the OER materials (5.7) of around one Likert point out of seven. It is possible that while students prefer these materials, instructors need more professional development in their use or to find more ways to connect research to practice in their classrooms. Indeed, instructors in this study rated the level of "ease/difficulty in teaching with open/alternative resources" at 3.6 out of 7, with 1 being much less difficult and 7 being much more difficult (p. 9). Interestingly, this question had the most negative response of all the Likert-scaled questions in the study, signaling the need for more research on how instructors use OERs in their classrooms.

OER textbook use is a relatively new technique, and there are many unanswered questions, despite the surge of research in the past 20 years (Hilton III, 2016; Veletsianos, 2020). For example, Clinton and colleagues (2019) found that students believed OERs had more relevant examples than commercial textbooks in a randomized experiment. However, these participants preferred the professional layout and photography in commercial textbooks. Several questions have not yet been

raised in the OER literature, according to Veletsianos (2022), such as "who creates OER?" and "who is and is not represented in OER?" (p. 3). Thus, OER expands equity for students, but we do not yet know how much and for whom.

These potential drawbacks of OERs can be eliminated by using commercial textbooks instead of OERs (Authors, 2022). Libraries across the United States have purchased eBooks for virtual lending (Gross, 2021). Some eBook licenses offer unlimited check-outs to an unlimited number of users. Using these eBooks as the primary textbook for college courses is known as using affordable learning materials (ALM) rather than OEMs. ALMs are learning materials that are of no cost or low cost to students (Hilton III, 2016) At least one study has found that ALM use through the library resulted in satisfied students compared to the use of a print textbook (Thomas & Bernhard, 2018). The current case study adds to the knowledge base of ALM through library eBooks in higher education classes. Unfortunately, little is currently known about ALM use, though some recent studies are beginning to know its effectiveness to provide students with more choices beyond OER material (Authors, 2022; Hilton III, 2016; Thomas & Bernhard, 2018).

Context & Attempted Solution: An Introduction to Research Methods for M.Ed. Students

We introduced ALMs to our master's degree students in the Fall 2020 semester. As educational research professors, we chose an introductory course to maximize the economic benefits of ALMs to the greatest possible number of students. Our chosen course is called "Introduction to Research in the Human Sciences." Most of the master's students in our college are required to take this course. It is specifically designed for students in early childhood, secondary education, library and media, and special education programs. We teach this course exclusively online through our learning management system, CourseDen (D2L). Depending on the semester in which it is taught, the course lasts 8 or 16 weeks. This course is considered a "survey course," as it scratches the surface of many research methods traditions, including qualitative, quantitative, and mixed methods, with specific emphasis on action research, needs assessment, and single subject design (Reinert Center for Transformative Teaching & Learning, n.d.).

We received a grant from Affordable Learning Georgia (ALG, n.d.) to transform our course into a no-cost course. Funds from this grant can be used to adapt or expand upon OERs, to adopt new materials through a university library system (often ALMs), and to use or create other materials that are of low or no cost (OERs or ALMs). We initially sought an OER text to implement in our virtual classroom, but we could not locate one that fit our needs. We were able to locate at least one OER on quantitative methods but nothing that could cover all of the subjects that must be surveyed in the course.

Rather than creating a full OER text, we utilized ALMs and located eBooks within our library instead of an OER (See Table 1). Again, we could not find a full textbook covering our needs, so we selected chapters from various books. Using multiple textbooks also provided us with an unintended positive outcome; students could print PDFs of the chapters out, as the vast majority of the texts had a limit of 100 pages per title. Additionally, providing students with the reading list forced them to practice the skill of checking out eBooks from the library. To personalize the experience for our students, we created lectures via PowerPoint and screencast software, created quizzes and exams based on the materials from the various chapters, and shared continuing education materials (also ALMs) within each module. We also provided students with relevant examples of research within the traditions of quantitative, qualitative, and mixed methods research within their respective fields.

As primarily qualitative researchers, we seek transferability rather than generalizability (Lincoln & Guba, 1985; Maxwell, 2021). To achieve transferability, we provided specific information about the course we taught, who our students were, what ALMs we assigned (See Table 1) and how we crafted

assignments for our students to close the research-to-practice gap. To allow for further transferability, we also provide the following information about our institution so that readers may make scholarly comparisons: Our institution is located in [redacted for blind review]. [Name of institution redacted for review] is a public university that participates in Title IV federal financial aid programs (National Center for Education Statistics [NCES], n.d.)[1]. It is categorized as a Doctoral/Professional University by The Carnegie Classification of Institutions of Higher Education (n.d.). In-state graduate-level tuition for the 2022-23 academic year was $6,488 (NCES, n.d.). There are 3,149 graduate students at UWG, with 745 identifying as men and 2,404 identifying as women. Roughly 82% (2,574) of graduate students are considered part-time. Of the 705 master's and doctoral degrees awarded by our institution in the most recent year of available data (between July 1, 2020 and June 30, 2021), 60% were College of Education degrees. In the fiscal year 2021, our institution's library had access to 860,679 eBooks and 136,644 periodicals (NCES, n.d.).

Table 1. Affordable Learning Materials.

Author(s)	Year	Title	Format	Section
Altschuld, J. W., & Kumar, D. D.	2009	*Needs assessment: An overview*	eBook	Chapter 1
Braun, V., & Clarke V.	2006	Using thematic analysis in psychology	Journal Article (Qualitative Research in Psychology)	pp. 77-101
Guthrie, G.	2010	*Basic research methods: An entry to social science research*	eBook	Chapters 1 & 2
Linder, S. M., Rembert, K., Simpson, A., & Ramey, M. D.	2016	A mixed-methods investigation of early childhood professional development for providers and recipients in the United States.	Journal Article (*Professional Development in Education)*	pp. 123-149
Maruyama, G. & Ryan, C. S.	2014	*Research methods in social relations* (8th ed.)	eBook	Chapters, 1, 2, 9, 15 & 16
Merriam, S. B., & Tisdell, E. J.	2015	*Qualitative research: A guide to design and implementation*	eBook	pp. 95-102; Chapters 1, 2, & 5
Niederhauser, D. S., & Lindstrom, D. L.	2006	Addressing the nets for students through constructivist technology use in K-12 classrooms	Journal Article (*Journal of Educational Computing Research)*	pp. 91-128
Ritchey, K. D., Coker Jr., D. L., & Jackson, A. F.	2015	The relationship between early elementary teachers' instructional practices and theoretical orientations and students' growth in writing.	Journal Article (*Reading and Writing)*	pp. 1333-1354
Rose, L., Vaughn, M., & Taylor, L.	2015	Reshaping literacy in a high poverty early childhood	Journal Article (*Journal of*	pp. 72-84

[1] The second author was employed by the University of West Georgia when this article was submitted but is now employed at a different institution.

		classroom: One teacher's action research project	*Research in Education)*	
Saldaña, J.	2011	*Fundamentals of qualitative research: Understanding qualitative research.*	eBook	Chapters 4 & 5
Tolmie, A., McAteer, E., & Muijs, D.	2011	*Quantitative methods in educational and social research using SPSS*	eBook	Chapters, 1, 2, 3, 4, & 5
Tracy, S. J.	2010	Qualitative quality: Eight "big-tent" criteria for excellent qualitative research	Journal Article (Qualitative Inquiry)	pp. 837-851
Vannest, K. J., Parker, R. I., & Davis, J. L.	2013	*Single case research in schools: Practical guidelines for school-based professionals*	eBook	Chapters 1 & 2
Willis, J. W., & Edwards C.	2014	*Action research: Models, methods, and examples*	eBook	Chapter 1

Qualitative Data Collection and Analysis

When we began working on this project, we felt we had an opportunity to share what we learned through the Scholarship of Teaching and Learning Commons (Bass, 1999; Gilpin & Liston, 2009; Tight, 2017). As qualitative researchers, we were particularly interested in how our students interacted with their required reading, what types of required reading they prefer (see Authors, 2022), and how using ALMs afforded us with unique opportunities to close the research-to-practice gap. With these considerations in mind, we align our current case study with the following research questions:

1. How do students describe the difference between commercial textbooks and ALMs?
2. How do students learn from course materials to make meaning that can be applied outside the classroom?
3. What lessons from our transformation can been transferred to other learning environments?

This study used a basic qualitative design (Merriam & Tisdell, 2016) to conduct a thematic analysis (Braun & Clarke, 2006) of data from student discussion posts, midterm evaluations, and final course evaluations. We collectively collected data over one year across four sections of the course taught by both authors in the summer and fall 2020 semesters. Merriam and Tisdell (2016) describe basic qualitative studies as general qualitative studies that do not fit within a specific methodological design like phenomenology or grounded theory. In keeping with all qualitative research, basic qualitative studies seek to understand the meaning participants attribute to a particular phenomenon. Following the paradigm of constructivism, we were interested in: "(1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences" (Merriam & Tisdell, 2016, p. 24).

Thematic analysis is one of qualitative research's most common forms of data analysis. Researchers analyze data to identify and explain commonalities in meaning that are grouped into large categories called themes to present as findings (Braun & Clarke, 2006). Thematic analysis is a "family" of analytic methods with a variety of options (Braun et al., 2022). To complete our analysis, we used ATLAS.ti 22 (Web). We chose to use the web version of the software as it allows for synchronous collaborative work. We used document groups to organize the data set by types (discussion posts, midterm evaluations, and final evaluations) and by course. Following this organization, we first read

through the data to familiarize ourselves with its content. Then, we used inductive concept coding (Saldaña, 2016) to code data focusing on the research questions. Our second and third rounds of the analysis organized the codes into categories and finally into themes to complete what Braun et al. (2022) refer to as the "initial theme generation" (p. 28). We then worked collaboratively to review and refine the initial themes into final themes.

Findings: A Reflexive Analysis of "Transforming" Our Courses

Shifting towards a no-cost course via ALMs was a challenging and rewarding endeavor. As instructors, we intrinsically desire to provide our students with the best resources to support their learning. However, our selections were a bit piecemeal so that we could provide our students with relevant material. For example, in one research textbook, a chapter on qualitative methods was particularly strong, but the section on action research was weak, so we had to find a different text with a strong action research chapter. As a result, our students reflected that the reading felt disjointed, which required that we provide extra guidance to students to help them connect the concepts across readings. Moreover, these texts were often ten or more years old. Major advances in these fields were often left out and needed to be supplemented directly within each module. For example, our qualitative methods chapter was written before Tracy's (2010) hugely influential "big-tent" paper on criteria for excellent qualitative research, so we provided that paper as additional reading. Adding more readings from multiple books and research articles was a challenge for our students, but they reported that these additional readings were helpful. For example, one student wrote this about Tracy's piece: "While this article mainly focused on providing the author's criteria for quality qualitative research, the information that she provided about each of her eight criteria points gave me a clearer picture of what qualitative data can look like..." In this quotation, our student explains how a document about the quality of qualitative research helped them understand what qualitative research is, even though they had very little background in the subject area. Some students, like this one, preferred Tracy's piece for understanding qualitative research more than the introductory chapters from a qualitative research textbook. These student reflections encouraged our course design.

We chose not to supplement our texts with OERs and stuck only with ALMs available within our university's digital library. The quality of the free texts was of one concern with OER use. The relevant OERs we located were not aligned to a course taught specifically within a College of Education classroom. Moreover, it seemed that the writing in the ALM texts was better copyedited, despite being slightly more dated. However, these texts were difficult to come by, as some publishers charged thousands of dollars for a single eBook copy. So, we had to find a balance between quality and availability. Publishers offered some texts with unlimited access to unlimited users. We believe these texts, if they are of quality, are the "sweet spot" of affordability for our students without sacrificing quality. However, we note that this strategy for ALM use is extremely time-consuming and is best completed with teams where several instructors teach the same course. As mentioned above, while going through this process, we needed to help build connections between readings and concepts for our students. Of primary concern was helping students see how research principles could be applied in their professional lives and, thus, help close the research-to-practice gap.

Connecting Research to Practice

As we teach for programs geared toward students who are practitioners, our overall learning outcome is that our students become scholar-practitioners (Smith & Wilkins, 2018). Scholar-practitioners often conduct research to solve problems of practice. They seek to make a practical impact in their field, which can, ideally, be carried over into various contexts to help solve similar problems. Therefore, our

students must be able to take what they learn in their research methods courses and apply that to their professional lives meaningfully. Except for a handful of students who did not complete their discussions in class, every student could successfully connect the content they were learning in our course with their practice. For example, one student said "I can use quantitative data in the classroom to measure… formative assessment results." Here, this student is connecting their pedagogical tools to quantitative research. In this case, we were able to elicit this reaction by simply asking our students to meaningfully make a connection between quantitative research and what they are currently doing in their practice. Though this practice may seem simple, most of our students made at least one connection to their practice and compared and contrasted their experiences with peers.

When we teach research methods, we intend to provide these M.Ed. students with the knowledge they need to enhance their knowledge about research (which they often claim is lacking). Ideally, this knowledge will refine how they engage with the data they already have and encourage them to collect new data to inform their practice. Many of our students are already informal researchers. We encourage them to apply their experiences to a formal social science research framework. With this stance, we support students' expanding knowledge about research methods by creating familiarity with seemingly foreign concepts. For example, one student who is a Pre-K teacher noted that she was primarily conducting qualitative research in her classroom "At this age, there aren't a lot of numbers to capture. It's more about the observations, conversations, and work samples." In this quote, the student builds upon their current knowledge of observations and work samples from their classroom with the qualitative concepts of observation guides and document analysis. This familiarity allows students to generate ideas of how they are becoming scholar-practitioners to conduct research to solve problems while simultaneously reducing the erroneous perception that all research is theoretical and an unattainable process for them.

ALMs and Connecting Research to Practice

When we transformed our course into a no-cost course with the support of a grant from Affordable Learning Georgia, we were particularly interested in gathering student feedback on the educational materials used in the course. We intended that these resources support our students in building a connection between research concepts and their professional practice; we wanted to know, from the students' perspectives, which materials actually helped students do this. To assess their perceptions, we asked students to identify which materials they considered useful in learning about research methods in an online learning environment through their discussion posts (Authors, 2022). Students readily identified specific readings, videos, and mini-lectures. In addition, they often discussed what in these resources made them helpful; these reflections were not specifically asked for in the discussion prompt. For example, one student wrote, "I honestly knew very little about qualitative research and how it could apply to me as an educator… [the required reading helped me] understand the concept and get a better picture of how I could apply it to teaching." The student followed up this quote with several examples of how they can improve their practice using qualitative data by providing parents with observation data from class to discuss why a student may be performing poorly in a given unit. Other students noted that the readings helped them see that they can use qualitative data to "figure out what is working instructionally." They expressed that quantitative measures can be flawed, as they may have made mistakes in creating a test or quiz. Qualitatively, they can incorporate feedback from their students to assess their instruction. Students typically compared the material they were learning in class to their direct interactions with students within the classroom rather than some other aspect of their position.

A key component that made course content (e.g. readings, mini-lectures, and websites) accessible to students in learning about and how to apply research methods was if they simplified a

complicated concept. Students expressed anxiety at the start of the class when thinking about learning about research methods. They anticipated that this course content would be inherently difficult to understand and employ. Whether the concept was complicated or just seemed complicated at first glance, students learned from materials that presented them in simplified, more practical ways. This strategy does not mean that they learned from materials that "dumbed down" the concepts but that they appreciated resources that presented complex topics clearly and directly. For example, one student said, "[The reading] was easy to understand and distinguish[ed] the kinds of data that I see at my school… [it helped] me determine math small group [composition] based on strengths and weaknesses." In this quote, the student shows how the uncomplicated language of the text led them to make a practical application in their classroom based on what is quantitatively measurable. Over the course of the semester, these students learn about quantitative, qualitative, and mixed methods designs, so we intended to scaffold each concept so that our students would see connections across the traditions of research.

The straightforward language in our ALM texts allowed students to build connections between what they were learning about and their own professional experiences. When the course materials used examples from published educational research studies, this direct language further resonated with students. In this context, students felt better equipped to connect research to their practice because they could see how their experiences fit with research contexts. One student said they "enjoyed the reading case study (Rose et al., 2015) because it related to my content area. It also provided a straightforward process for how to incorporate qualitative research practically." The student went on to explain how they had been defending their work as an art teacher and that qualitative research had helped them to explain why their field is important when STEM subjects seemed to dominate the discourse in their school.

The students in our course began to understand how research could be used to "solve" problems of practice within their own professional lives that may be similar to those of other researchers and practitioners. These examples also provided ways for students to formalize their own practices, whether through a formal research study or by applying research principles to improve or refine their practice. These characteristics allowed students to learn from the ALMs used in the course so that they could make meaning from them and transfer that learning outside of the context of the course.

Transferring Learning from ALMs to Close the Research to Practice Gap

We next asked ourselves how students learn from course materials to make meaning that can be applied outside the classroom? To answer this question, we reflected upon our interactions with students and the comments they left in course evaluations. First, students explained that they could transfer what they learned about research outside the classroom when the resources were presented in a way that matched their preferred learning style, environment, or community. Some students indicated that they preferred learning from audio-recorded presentations, while others preferred reading. For example, one student wrote, "I was especially appreciative of the PowerPoints (sic) that included a script. This way[,] the student's learning modalities were adequately addressed (visual or auditory)." Students who referenced the learning environment also explained that they appreciated ALMs in the online learning environment because they were able to learn at their own pace, reference the materials as many times as they wished (and sometimes this was with "fresh" eyes after a discussion or course meeting), or helped them feel like they were in what they described as a "real" course, even though they were in an online, asynchronous learning environment. Students who specified that the learning community best supported them in making meaning from the ALMs noted that they preferred learning through collaborative discussions. In this case, they explained that they could

communicate and gain insight into their own experiences through others' assessments and learn from the research and professional experiences of others.

Second, students learned through continued engagement with and application of the ALMs in the course. Of primary importance in the course design was that students use research concepts in various ways. As an example, the discussion posts required that students connect the research concepts covered in the class with their own experiences. Students were guided through the steps to identify and describe a research problem based on a problem of practice. They would then look at the literature to write a research question for a hypothetical study they could conduct to provide possible solutions to the problem of practice. These activities encouraged students to visualize how they might use concepts learned in the course outside of the course to support and improve their professional practice. One student wrote an overall assessment of this continuous engagement, saying:

> The text and class materials were easy to follow and aided drastically in my understanding of the instruction, the mini-lectures were extremely helpful in explaining things in an easy to understand way and enhance[d] what I could find out in the reading… and the class activities and assignments aided in my understanding and allowed me to discuss my learning with my classmates and learn from them as well.

According to this student, each resource built upon the others and supported their learning. Often, students took the connections to their professional lives beyond personal improvement to consider how such research could systemically improve their professional organization (such as a school).

Finally, students expressed that they used the research examples provided in the course as a venue for explorations into how they could improve their self-concept and meet their goals as professionals. One student wrote, "I think the most important thing that I learned was how to apply this research into my own profession and be successful with what I'm aiming to do." Students explained that they learned from examples of how others conduct educational research to create a deeper meaning of using research to benefit how they view themselves as teachers and educational leaders. Throughout the course, we used published research studies to show research concepts in practice. Moreover, we used the same published study throughout the course. We separated each study into pieces, referring to the same articles when discussing ideas such as research problem, research purpose, research question, and others. The continued citation and reference to a core group of published works and guidance regarding how to find and evaluate other examples supported students in learning more about how to apply research principles to their own practice.

Reflections & Implications: What Can We Do?

Using ALMs to transform our class was a challenging experience. As instructors, choosing a textbook that meets our scholarly needs is easy regardless of price or format (Secret et al., 2011). However, in many cases, this strategy is not the best instructional practice. This experience gave us new insights into how adult students learn about research methods online. We learned several important lessons from combing through ALMs that we continue to apply to all our courses. Many of these lessons should not be seen as limited to research methods or online course delivery, though we do believe virtual research methods instructors will benefit from our reflection. In this section, we present what we learned while engaging with this process, including adherence to andragogy, transparent instruction, and accessible materials for beginner and advanced learners.

First, when teaching research methods to adult students who are also practitioners, we stress the importance of keeping adult learning principles in mind. Knowles (1968) is credited with the first

theory of adult learning, called andragogy. While andragogy has been significantly critiqued (Merriam et al., 2007) and updated since then (Knowles et al., 2020), the core principles of andragogy permeate forthcoming adult learning theories. Of critical importance is that adult learners are self-directed in their learning, meaning they accept responsibility for their learning, and they are proactive in their learning experiences, particularly in informal and nonformal learning environments (Johnson et al., 2014). In the case of our online research methods class, students were driven by a desire to improve their professional practice, as is common for adult learners. They were not particularly interested in learning the theory or philosophy of research for the sake of learning it. Still, they needed practical guidance in how to use these principles outside of the classroom. Supporting students in directing some of their own learning also accounts for the fact that adults have their own motivations, primarily internal motivations, regarding what and how they learn.

To attend to these motivations, and go beyond them, we recommend that instructors make clear the reasons for learning new material. We were intentional and transparent in our decisions for content, assignments, and required interactions of students. We also worked to connect our decisions with their own motivations and experiences to ensure that the course content was relatable to their lives outside of the classroom. Thus, we needed to intertwine course content with student experiences. Adults have a wealth of expertise that they bring with them to any new learning environment. Using ALMs allowed us to account for this experience and choose specific readings that supported a class structure in which students had opportunities to reflect on their experiences and use them to guide the development of classroom assignments and online discussions (See Rose et al., 2015 and Ritchey et al., 2015 for example reading). Students chose problems they experienced in the classroom, media center, or other professional environments to serve as the base for the development of online discussion content, the components of hypothetical research studies, and literature searches. Their previous professional experiences and new experiences with research methods in this course drove the evaluation of published works and discussion of research content with peers regarding their application in a variety of settings. As instructors, we worked to create a learning environment that supported students in learning from their own experiences and in learning from the experiences of their classmates.

As a final principle of adult learners, what our students were ready to learn was determined by their previous experiences, developmental standing, and social context. Students came to the class with varying levels of expertise and ability. We intentionally structured our course so that beginners felt supported and students with more advanced knowledge felt challenged (Young, 2021). We used some ALMs as required materials and some as what we called "continuing education" materials. All students began at the beginning with the required materials, but for those who had advanced knowledge (or were seeking it), the continuing education materials provided them with an avenue to higher learning.

While keeping adult learning principles in mind supported the design of our course, how we expressed our expectations, and how we created space for learner experiences, we were continually reminded that what may seem easy or simple to us could become overwhelming to our students. While we searched for ALMs to use in our course, we read and evaluated a great deal of material about teaching research methods to novices. We intentionally chose materials that seemed to us to be clear, coherent, and applicable. However, these evaluations were made from a wealth of prior knowledge. While we worked to remember what it was like to be novices, research methods is a difficult topic and there is no way to avoid complex material.

To support student learning through complexity, we provided screencasts, mini-lectures, and online videos (all ALMs). We created screencasts regarding tasks and topics that would help students navigate course content. For example, we created screencasts to guide students through accessing the readings on the library's website. While we did not walk them through identifying each individual

source (due to the fact that navigating the online library to find scholarly sources was a key learning outcome of the course), we did create a screencast about how to access digital textbooks. This task can be tricky as books can come from multiple databases and students may not have prior knowledge of how to navigate a collegiate library's website. Frustration can kill a student's ability or motivation to learn, and guidance on how to perform the mechanics of required tasks was essential in supporting students to begin to perform those tasks. In an asynchronous online environment, we cannot meet regularly to work through the types of things that are assumed in a synchronous learning environment.

We created mini-lectures to support students in reading the course materials. Students noted that some of the readings seemed to be in a different language and that they needed to translate them in order to attempt to understand and apply them. In some ways, research methods is a different language and it was our responsibility as instructors to facilitate that translation. Our mini-lectures introduced the topics in smaller pieces and provided examples of their use in educational practice. Students noted that the mini-lectures were essential to their learning because they prepared them to tackle later course readings. It is important to note that we did not "dumb" anything down in these mini-lectures. When creating such materials, we encourage instructors to remember their students' intelligence and the wealth of experience they bring to the course. We considered it our responsibility to use student experiences to bring course content to them. We used the mini-lectures to present the principles of research methods piecemeal. Subsequent mini-lectures connected the pieces like a conceptual puzzle to show an overall picture of a research project built piece by piece throughout the course.

Conclusion

In this case study, we analyzed and reflected on our process of transforming our course for financial accessibility (National College Attainment Network, 2022) and relevance to the workplace (Ambrose & Wankel, 2019). We chose to make changes to our course to provide ALMs at the same time that we were aligning our course to professional practice. These changes were highly complementary because we were critiquing potential ALMs for use in our course for their quality in the academic and practical sense (Bansal et al., 2012). We recommend making these changes at the same time for students. Like Hilton III (2016), we began our search for learning materials with OERs, but were disappointed with both the quality and quantity of books available (Fisher et al., 2015; Thomas & Bernhardt, 2019). Rather than giving up, we decided to use the resources at our university library to provide students with an alternative to the traditional textbook (Hendricks et al., 2017).

Using these eBooks as the primary textbook for college courses is known as using affordable learning materials (ALM) rather than OERs. ALMs are learning materials that are of no cost or low cost to students (Hilton III, 2016). At least one study has found that ALM use through the library resulted in satisfied students compared to using a print textbook (Thomas & Bernhard, 2018). After making changes to our course, we learned several lessons. First, we learned that adherence to adult learning theory is critical in a graduate-level course (Knowles et al., 2020). Though our purpose was to create a course aligned with real-world implications from the beginning, designing work-centric learning materials reinforced our belief throughout the process. Second, we learned that students appreciate transparency in what we are teaching. In research methods courses, students often think, "When will I ever use this?" By providing real-life examples of data collection, we enabled students to have a better attitude toward the material. Finally, we learned that required reading should be accessible for all learners, while additional reading should be provided for those already comfortable with the material.

While this case study examines our graduate-level research methods course, we believe there are applications for use beyond this context. The ability to discuss practice in a higher education course

is typically reserved for master's and doctoral work within the professions. However, undergraduate instructors may use OERs and ALMs to close the research-to-practice gap within professions with a bachelor's degree entry point, such as business, education, engineering, and nursing. As we noted earlier, ALMs were the materials that we used to close the gap, but the instructor(s) must ultimately be the ones that make specific practice-oriented adaptations. They must also design their course and instruct in a way which contextualizes the ALMs to be used for this purpose. We also encourage the use of OERs and ALMs in non-methods courses, especially for instructors of education courses for practitioners. Educators who are seeking advanced degrees will typically have some experience in the classroom. As a result, instructors should attend to adult learning theory as they develop their courses with OERs and ALMs (Johnson et al., 2014; Knowles et al., 2020). Specifically, instructors of these courses should allow for students to direct their learning towards problems that they experience within their current practice. With these considerations in mind, the use of ALMs in classrooms can encourage students to engage with and apply research concepts and research-based practices in a way that leads to sustainable and practical improvement.

References

Affordable Learning Georgia (n.d.). About. https://affordablelearninggeorgia.org/about/rfp_r23

Ambrose, S. A., & Wankel, L. A. (2019). *Higher education's road to relevance: Navigating complexity*. Jossey-Bass.

Authors, 2022. Redacted for blind review.

Bansal, P., Bertels, S., Ewart, T., MacConnachie, & O'Brien, J. (2012). Bridging the research-practice gap. *The Academy of Management Perspectives, 26*(1), 73-92. https://doi.org/10.5465/amp.2011.0140

Barnhart, T., & van Es, E. (2015). Studying teacher noticing: Examining the relationship among pre-service science teachers' ability to attend, analyze and respond to student thinking. *Teaching and Teacher Education, 45,* 83-93. https://doi.org/10.1016/j.tate.2014.09.005

Bass, R. (1999). The scholarship of teaching: What's the problem? *Inventio: Creative Thinking about Teaching and Learning, 1*(1), 1-9.

Benander, R. (2009). Experiential learning in the scholarship of teaching and learning. *Journal of the Scholarship of Teaching and Learning, 9*(2), 36-41. https://scholarworks.iu.edu/journals/index.php/josotl/article/view/1724

Bliss, T. J., Hilton III, J. L., Wiley, D., & Thanos, K. (2012). The cost and quality of open textbooks: Perceptions of community college faculty and students. *First Monday, 18*(1), 1-12. https://doi.org/10.5210/fm.v18i1.3972

Braun, V., Clarke, V., Hayfield, N., Davey, L., & Jenkinson, E. (2022). Doing reflexive thematic analysis. In S. Bager-Charleson & A. McBeath (Eds), *Supporting research in counseling and psychotherapy: Qualitative, quantitative, and mixed methods research* (pp. 19-38), Palgrave MacMillan.

Brown, S., Kuimelis, C., & Mayer, G. (2022, November 7). College is a dividing line in politics. Here's what you need to know. *The Chronicle of Higher Education.* https://www.chronicle.com/article/college-is-a-dividing-line-in-politics-heres-what-you-need-to-know

Clinton, V. Legerski, E., & Rhodes, B. (2019). Comparing student learning from and perceptions of open and commercial textbook exerpts: A randomized experiment. *Frontiers in Education, 4*(110), 1-12. https://doi.org/10.3389/feduc.2019.0011

Coker, C., & Glynn, J. (2017). *Making college affordable: Providing low-income students with the knowledge and resources needed to pay for college.* Jack Kent Cook Foundation.

https://mrodriguez01.wpenginepowered.com/wp-content/uploads/2018/05/2017-JKCF-Making-College-Affordable-Web.pdf

Colvard, N. B., Watson, C. E., & Park, H. (2018). The impact of open educational resources on various student success metrics. *International Journal of Teaching and Learning in Higher Education, 30*(2), 262-276. http://www.isetl.org/ijtlhe/

Del Valle, G. (2019, March 6). The high cost of college textbooks. *Vox*. https://www.vox.com/the-goods/2019/3/6/18252322/college-textbooks-cost-expensive-pearson-cengage-mcgraw-hill

Delimont, N., Turtle, E. C., Benett, A., Adhikari, K., & Lindshield, B. L. (2016). University student and faculty have positive perceptions of open/alternative resources and their utilization in a textbook replacement initiative. *Research in Learning Technology, 24*, 1-13. https://doi.org/10.3402/rlt.v24.29920

Fischer, L., Hilton III, J. L., Robinson, T. J., & Wiley, D. A. (2015). A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. *Journal of Computing in Higher Education, 27,* 159-172. https://doi.org/10.1007/s12528-015-9101-x

Gilpin, L. S., & Liston, D. (2009). Transformative education in the Scholarship of Teaching and learning: An analysis of SoTL literature. *International Journal for the Scholarship of Teaching and learning, 3*(2), 1-80. https://doi.org/10.20429/ijsotl.2009.030211

Gross, D. A. (2021, September 2). The surprisingly big business of library e-books. *The New Yorker*. https://www.newyorker.com/news/annals-of-communications/an-app-called-libby-and-the-surprisingly-big-business-of-library-e-books

Hendricks, C., Reinsberg, S. A., & Rieger, G. W. (2017). The adoption of an open textbook in a large physics course: An analysis of cost, outcomes, use, and perceptions. *International Review of Research in Open and Distributed Learning, 18*(4), 78-99. https://doi.org/10.19173/irrodl.v18i4.3006

Hilton III, J. L., Robinson, T. J., Wiley, D., & Ackerman, J. D. (2014). Cost-savings achieved in two semesters through the adoption of open educational resources. *International Review Of Research in Open and Distributed Learning, 15*(2), 67-84. https://doi.org/10.19173/irrodl.v15i2.1700

Hilton III, J. L. (2016). Open educational resources and college textbook choices: A review of research one efficacy and perceptions. *Educational Technology Research and Development, 64*, 573-590. https://doi.org/10.1007/s11423-016-9434-9

Howard, V. J., & Whitmore, C. B. (2020). Evaluating student perceptions of open and commercial psychology textbooks. *Frontiers in Education, 5*(139), 1-14. https://doi.org/10.3389/feduc.2020.00139

Illowsky, B. S., Hilton III, J. L., Whiting, J., & Ackerman, J. D. (2016). Examining student perception of an open statistics book. *Open Praxis, 8*(3), 265-276. 265-276. https://doi.org/10.5944/openpraxis.8.3.304

Johnson, M., Partlo, M., Hullender, T., Akanwa, E., Burke, H. Todd, J., & Alwood, C. (2014). Public deliberation as a teaching andragogy: Implications for adult student learning from a doctoral higher education policy course. *Journal of the Scholarship of Teaching and Learning, 14*(1), 95-108. https://doi.org/10.14434/josotl.v14i1.3943

Knowles, M. S. (1968). Andragogy, not pedagogy. *Adult Learning, 16*(10), 350-352.

Knowles, M. S., Holton, E. F., Swanson, R. A., & Robinson, P. A. (2020). *The adult learner: The definitive classic in adult education and human resource development* (9th ed.). Routledge.

Korthagen, F.A.J. (2007). The gap between research and practice revisited. *Educational Research and Evaluation, 13*(3), 303-310. https://doi.org/10.1080/13803610701640235

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. SAGE.

Maxwell, J. A. (2021). Why qualitative methods are necessary for generalization. *Qualitative Psychology, 8*(1), 111-118. https://doi.org/10.1037/qup0000173

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed.). Jossey-Bass.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

National Center for Education Statistics. (n.d.). Integrated Postsecondary Education Data System. https://nces.ed.gov/ipeds

National College Attainment Network. (2002). College affordability. https://www.ncan.org/page/affordability

Reinert Center for Transformative Teaching & Learning. (n.d.). Defining features: Survey course. https://www.slu.edu/cttl/resources/defining_features_resources/survey_courses.pdf

Sato, M., & Loewen, S. (2022). The research-practice dialogue in second language learning and teaching: Past, present, and future. *The Modern Language Journal, 106*(3), 509-527. https://doi.org/10.1111/modl.12791

Secret, M., Leisey, M., Lanning, S., Polich, S., & Schaub, J. (2011). Faculty perceptions of the scholarship of teaching and learning: Definition, activity level and merit considerations at one university. *Journal of the Scholarship of Teaching and Learning, 11*(3), 1-20. https://scholarworks.iu.edu/journals/index.php/josotl/article/view/1824/1821

Smith, L. S., & Wilkins, N. (2018). Mind the gap: Approaches to addressing the research-to-practice, practice-to-research chasm. *Journal of Public Health Management and Practice, 24*(1), S6-S11. https://doi.org/10.1097/PHH.0000000000000667

The Carnegie Classification of Institutions of Higher Education (n.d.). Basic classification description. https://carnegieclassifications.acenet.edu/classification_descriptions/basic.php

Thomas, W. J., & Bernhardt, B. R. (2018). Helping keep the costs of textbooks for students down: Two approaches. *Technical Services Quarterly, 35*(3), 257-268. https://doi.org/10.1080/07317131.2018.1456844

Tight, M. (2017). Tracking the Scholarship of Teaching and Learning. *Policy Review in Higher Education, 2*(1), 1-18. https://doi.org/10.1080/23322969.2017.1390690

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry, 16*(10), 837-851. https://doi.org/10.1177/1077800410383121

Veletsianos, G. (2020). Open educational resources: Expanding equity or reflecting and furthering inequalities. *Educational Technology Research and Development, 2020,* 1-4. https://doi.org/10.1007/s11423-020-09840-y

Winitzky-Stephens, J., & Pickavance, J. (2017). Open educational resources and student course outcomes: A multilevel analysis. *International Review of Research in Open and Distributed Learning, 18(*4), 35-49. https://doi.org/10.19173/irrodl.v18i4.3118

Wynants, S. & Dennis, J. (2022). Redesigning a research methods course with personalized, interactive OER: A case study of student perceptions and performance. *Journal of the Scholarship of Teaching and Learning, 22*(1), 138-153. https://doi.org/10.14434/josotl.v22i1.31706

Young, C. J. (2001). The course of a life: The high impact of undergraduate research and mentoring. *Journal of the Scholarship of Teaching and Learning, 25*(1), 9-12. https://doi.org/josotl.v21i1.32461