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RESEARCH ARTICLE

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Abstract

This paper outlines a classroom activity to help students engage in research methods and lessen anxiety and apprehension commonly associated with research methods courses. The described class activity offers students a shared research experience to promote the skills necessary to understand, conduct and translate research into ethical social science practice. The activity was conducted in a graduate social work programme but is applicable across the social sciences. Content covered includes sampling, research design, ethical considerations, brief evaluation and helping students think critically about ways to improve research methods in order to facilitate competencies necessary for evidence-based practice (EBP). An introduction to the activity, class discussion points including integration throughout the course, and implications for curricula and practice are discussed.

Keywords: research methods, evidence-based practice, teaching research, class research activity, social work education

Introduction

Social science research has been defined as ‘the involved interaction between ideas and evidence’, wherein social researchers make sense of evidence, use evidence to extend, revise and test ideas (Ragin 1994, p8). Similarly, research and researchers has been defined as ‘a systematic process of investigation and analysis that develops and promulgates generalizable knowledge to inform professional practice and social policy’ by the US Council on Social Work Education [CSWE] (2006, p2) but has been also emphasised by the International Federation of Social Workers (2012) as a means towards achieving more quality social services.

Through research methods, social research attempts to validate theories through data collection and analysis in order to explore, describe, explain and predict social phenomena. And yet, despite the importance of research as an essential component of advancing social science, it is often the curricula content most fraught with student resistance (Adam *et al.* 2004,

Cameron & Este 2008). This paper addresses the research opposition found within the field of social work; however, much of the literature relates generally to social sciences and professional practice wherein human interactions are examined. Precisely because research methods are required within social work curricula, among various others graduate programmes including sociology, political science, among others, Maschi *et al.* (2007) suggested that educators should focus on addressing this resistance and lessen anxiety associated with research courses.

Renewed emphasis on evidence-based practice

Over the last decade there has been a strong push towards the implementation of an evidence-based practice (EBP) framework throughout the fields of medicine, psychology and, recently, social work (McCracken & Marsh 2008). However, regardless of discipline, the adoption of EBP is a moot point if the foundational steps of research design are not understood or valued by graduate students involved in social sciences research. Before empirically informed interventions can be implemented and evaluated in professional settings, an understanding of the ethics behind human subject research and the guidelines for research involving human subjects warrants full consideration (Vollmer & Howard 2010). As Hewson *et al.* (2010) examine, examples of innovative research curricula can be found within undergraduate and graduate courses of social work with a strong research emphasis (see Anderson 2002, Berger 2002, Walsh *et al.* 2010) and practice areas (see Holley *et al.* 2007).

Research is an essential component of EBP that drives the quest and guidance for continual improvement (Lewis 2003, Rubin & Babbie 2007). The adoption of research strategies enhances critical thinking skills both by those who conduct research and by those who consume it (Thyer 2004, Rubin & Babbie 2007, McCracken & Marsh 2008). Research also plays a key role in testing the reliability and validity of theories, assessment tools, and interventions in various social science fields. In all, there is a direct correlation between research, the development of the social science knowledge base, and improved practice strategies (Lewis 2003, Jenson 2006). However, there are barriers to the implementation of EBP, which need to be recognised.

Barriers to implementing evidence-based practice

First, for many practitioners involved in social phenomena, they must make a concerted effort to keep abreast of research to guide practice decisions. Lack of time, access to scholarly journals and peer-reviewed evidence are often cited as a reason why practitioners may have difficulty applying EBP to practice (Gambrill 2007). However, in order to make EBP a reality in practice settings, research methodology must be highlighted and valued within social science graduate training and related coursework (Mullen *et al.* 2007, Moore & Avant 2008). Second, within the many social science fields, research courses were previously consigned to doctoral students, and only recently have the benefits of incorporating evidence-based practice into social work curricula been recognised (Lewis 2003, Grady 2010). Third, the timing of one's training and how much continuing education has been sought can also impact the implementation of EBP. Practitioners further removed from their education training may not be as familiar with the importance of EBP and how it can be included in their current practice. The literature on the implementation and utilisation of EBP in terms of the substance-abuse field confirms this point specifically.

For example, EBP was more positively viewed, and more likely to be adopted in addiction treatment organisations when staff (both directors and clinical staff) had higher levels of education and professional training (Lundgren *et al.* 2011). Organisations whose staff had higher educational levels, such as masters degrees, were more likely to favour the adoption of EBP and desire trainings on EBPs in comparison to staff with lower levels of education (Lundgren *et al.* 2011). Finally, while EBP has been emphasised more readily in the US, UK and Nordic countries, 'it's far away from being generally accepted across Europe'

(Erath 2012, p1) and may be even more problematic when and if applied to different economic, political and social contexts of emerging and developing nations where social sciences may vary dramatically. As Sundell *et al.* (2013) articulate, the cultural adaptation process between contexts is an important contextual factor that may influence the affect of EBPs when transported to other cultures and new contexts.

Research resistance in the social sciences

Currently, schools of social work and other disciplines in the social sciences are well positioned to instill in their graduates the value and knowledge of EBP; however they face several challenges to achieving this goal. Often graduate students in social work appear uninterested in research or do not (yet) fully understand how it connects to practice settings (Jenson 2007, Harder 2010), particularly if they view themselves as 'clinicians' or direct practitioners (Roberts 1989, Cameron & Este 2008). This attitude contributes to students being characterised as 'research reluctant' (Epstein 1987, Secret *et al.* 2003) and demonstrating increased anxiety around research and statistical content (Unrau & Grinnell 2005). In an audit of social work education in the UK to help set objectives towards building research capacity in the discipline and profession, MacIntyre and Paul (2013) noted that the teachers/faculty themselves may lack the skills to teach research content well, adding a further challenge. Further, regardless of student perceptions about the utility of research in future practice, there is variation in how graduate programmes infuse EBP into curriculum, if it is introduced at all (Grady *et al.* 2010). This inconsistent training among social work students will likely lead to the inconsistent adoption of an EBP framework among new practitioners after graduation and further perpetuate research resistance.

In order to lessen anxiety and apprehension commonly associated with research methods courses, and increase the knowledge and skills needed to acquire and assess appropriate interventions for practice, graduate social science programmes need to be more creative in engaging students in research methods and the implementation of EBP (Cameron & Este 2008, Grady 2010). Students need to understand research methods in order to be critical consumers and producers of research, and evaluate their own practice (Moore & Avant 2008). Engaging students in classroom activities helps makes research more accessible and enjoyable and may help lessen associated course trepidation. An increased appreciation for research and motivation to participate sets a foundational tone for which EBP is rooted.

The study objectives of the classroom activity are to create a non-threatening and creative introduction to the research process wherein students take part in a collective research experience. This activity can help promote the development of research skills by offering students a greater understanding of the basic processes involved in conducting research, thinking through research design, sampling, and ethical considerations – all pertinent competencies required for the understanding and implementation of EBP (Moore & Avant 2008).

Class activity to engage MSW students in research methods

This paper describes a classroom activity designed to meet the goals discussed above. The research exercise consists of four parts: the introduction, the actual hands-on activity, the post-activity discussion and follow-up throughout the semester. First a brief description of the classroom context and institution are detailed to further clarify who participated in this activity and the importance of EBP at this specific institution.

Institutional and classroom context

This activity is conducted in the first of two research courses offered to Masters in Social Work (MSW) Students during their second semester of students' first year in the

programme. The class is part of the foundation curriculum for a required research methods course titled 'Evidence-Based Practice and Program Evaluation' for graduate social work students at a state university school in the southeast area of the US. This institution has existed for over 90 years and has a strong research emphasis as evidenced by a top ranking of social work programmes in the US based on the US News and World Report – a factor worth mentioning given this helps paint a picture of this School's emphasis on EBP in the masters and doctoral programmes (no undergraduate social work degree is offered). The authors consist of two faculty members who teach this introductory research methods course to MSW students regularly and also consider EBP a research and teaching interest. The third author was a former student in the research course who has since enrolled in the PhD program at this same institution.

There were four sections of this introductory research course offered with 20–25 students in each class. On average, the foundation cohort size is about 80 students and while it is possible to opt out of this introductory course through an exam, this is rarely done indicating MSW students do not consider that the materials are overly redundant to previous research experience they may have had. Since the manuscript outlines a classroom activity specifically and not a research project, demographic information was not collected in the semester the manuscript was written. However, the average cohort age is mid-20s and about 20% of the cohort were students of colour. A further discussion below highlights how the limited demographic information on participants is a limitation to consider, especially regarding generalisability at other institutions.

The subsequent section outlines how this activity can be applied to a class in the social sciences. The activity is introduced in the third class session during a 15-week semester but is referred back to several times over the course of the semester when specific content related to question formation, questionnaire and measurement, sampling methods, validity and reliability among other key concepts are discussed.

Activity introduction

At the start of the session, the instructor provides an introduction to the activity by telling the students that they will have the opportunity to participate in a brief research study together. The instructor then reads a script (see Appendix A) that describes how he/she has decided to supplement their personal income by marketing coffee cake to local coffee shops and bakeries. (Coffee cake is used here in the American sense of a baked breakfast pastry, often containing nuts, fruit, etc., or coated with sugar or icing to be eaten with coffee or the like.) Students are invited to participate in a research study designed to test the quality of the coffee cake by first tasting it and then completing a survey to rate aspects of the quality of the cake (see Appendix D). The purpose of the study is described to students as identifying strategies for improving the coffee cake, to identify possible marketing strategies of the product.

However, as a learning tool, this exercise provides students with an opportunity to participate in a real research study for a topic that is neutral in content, a point further addressed subsequently. The benign, straightforward nature of this survey is purposeful in that it allows students to engage in the survey without warranting a topic or skill expertise, and it also demonstrates that class can be enjoyable.

The hands-on activity

After the brief introduction, the instructor explains that no identifying information will be included in the survey to link students to their responses and that participation is completely voluntary. It is also stated that non-participation will have no impact on the student's final grade and that participants may stop at anytime while tasting the cake or

completing the survey. Risks and benefits of participation are discussed. The only known risks to participating in this class research project concerns food allergies (see list of ingredients, Appendix B), and the only known benefit is a free piece of coffee cake. Students are asked to read and sign an informed consent form (see Appendix C) at which point, they can come to the front of the room to leave the signed consent form, and get a piece of coffee-cake to sample and the one-page survey. When all participating students have completed their surveys, the class discussion can begin.

Post-activity discussion

There are several key issues regarding the research process that this class activity addresses and rich discussion can be facilitated. Some key questions that can be asked by the instructor to begin the discussion include:

- What was it like to be invited and to participate in a research study?
- Did you feel respected and/or that your opinion was valuable?
- Why and how were you selected for participation?
 - Do you think this is a good method for selecting research participants?
 - What did this method tell you about sampling design? A discussion on research design and the usefulness of control/comparison groups, wait lists, among many other concepts can be further explored.
- Do you think there are any ethical problems with this research project?
 - A pivotal moment in this exercise is when position and power are considered in the research process. Given that the instructor made this cake, the social desirability of students to please the instructor could certainly impact student responses to the invitation to participate and on the survey.
 - What could be done in the future to eliminate some of these ethical violations?
 - Discuss the legacy of unethical research studies and why research with human subjects is now more regulated (Vollmer & Howard 2010).
 - Another important point is the issue of confidentiality. The instructor told students no identifying information would be collected on the survey in order to promote honest feedback about the cake. However, the instructor stayed in the classroom while the students completed the surveys and likely could link some students to their responses.
- What did you think about the questions and response options included in the survey?
 - What ways could some problems embedded within the survey be eliminated?
 - How does survey construction and question clarity impact the responses back from participants?
 - What other questions should be included to truly meet the study objectives?
- How does this survey change if we were asking clients to inform us of a specific social phenomenon such as a risky behaviour they are engaged in (such as recreational drug use) or a service they are seeking (such as treatment for HIV/AIDS)?
 - How is confidentiality or anonymity handled?

- How is power addressed? Do respondents have an opportunity to decline participation and how, if at all, does this make them feel vulnerable?
- What do we need to consider about those who answered the survey and its generalisability?
- How do issues of acquiescence response bias and social desirability bias impact the data collected?

Follow-up discussion throughout the semester

This activity allows students to contextualise research methods and terminology relating to research ethics, sampling, survey design, data collection, dissemination and should also include evaluation. The cake activity can be discussed throughout the semester as students delve more deeply into each of these research processes and compared to social research under review according to the graduate course. Additionally, student survey responses can be used for demonstrating simple descriptive statistics. Specifically, the raw data can be used in SPSS or Excel and students can calculate means and standard deviations with real data that has practical meaning to them. Another application can include asking students to adapt this brief survey into a specific topic area that applies to their area of interest, internship or work setting. This application, either as a classroom lab or assignment, helps social science graduate students think through goals of the research question, instrument development, sampling and ethical considerations for respondents. A critical reflection on a more benign survey (such as the cake survey) versus something more specific to a discipline highlights the difficulties researchers must consider when designing a research study relevant to their field/profession.

Implications

This activity has several implications for graduate students learning introductory research methods and acquiring skills necessary to utilise an EBP approach. This activity offers students a collective and interactive research experience that they can build on and refer to throughout the semester. By utilising an activity that is non-threatening and fun, students will likely feel less anxious about the research methods course and begin to participate actively in discussion. One of the keys to effectively teaching research to students is through engagement (Howard *et al.* 2007, Jenson 2007). Besides encouraging students to enjoy research and lessening anxiety about a typically dreaded course, this activity provides an opportunity to demonstrate why simple and more complex research design is pertinent to social sciences generally. This activity allows students an introductory activity to initiate dialogue about the types, scope and stages of research. Given various disciplines' reliance on EBP, graduate social science students need the skills and awareness to distinguish between quality and flawed research at each stage of the research process. The cake activity emphasises some common ethical problems while encouraging critical thinking and problem-solving skills which are crucial to conducting and consuming research (McCracken & Marsh 2008, Moore & Avant 2008). While this study has not been conducted in an undergraduate setting, the application in Bachelors research methods courses seems promising given similar levels of research resistance are experienced at the undergraduate level (Secret *et al.* 2003, Maschi *et al.* 2007).

Limitations

Despite the ease with which this classroom activity can be adapted to research methods courses in social science disciplines, there are several limitations to consider before adapting it to research methods curricula. First, the benign, straightforward nature of this

survey is purposeful in that it allows students to engage in the survey without warranting a topic or skill expertise, and it also demonstrates that class can be enjoyable. However, for students with more advanced research experience, it may be rudimentary. Second, this classroom activity worked for MSW students in a US graduate classroom. However, based on educational curricula in other countries, and other professional training it may not be as generalisable. While evaluation was not a core component of this classroom activity it would be necessary to follow up at the end of the course to see whether students thought this activity helped their understanding of the value of research methods. Anecdotal validation for this class activity was expressed by students as a 'fun' and 'clever' class session but more thorough evaluation on what was gained from this classroom activity and how it can be used to understand research in practice settings was a limitation from the activity as conducted.

Conclusion

This article outlines a classroom activity to engage social science graduate students in research and to promote the skills necessary to understand, conduct and translate research that will be vital to their work in social settings based on social phenomena. Effectively teaching research methods to graduate students is paramount to ensuring future practitioners can critically examine scientific evidence to inform practice and better fulfil professional obligations towards the human subjects we encounter and the communities in which we live. As Harder (2010) states: 'Despite students' reluctance to engage in research (or perhaps precisely because of their reluctance), we must find ways to effectively teach research skills and knowledge' (p196). Although research methods courses have historically been met with resistance by graduate social science students, particularly within social work, we hope this activity will begin to engage students in the research process not just throughout the duration of the course, but by promoting the value of research and setting a foundational tone for EBP throughout their careers.

Appendix A: Cake activity introduction script

- Aside from being an instructor and teaching MSW students, I enjoy baking and want to expand this from a hobby to be something that will be sold in local coffee shops.
- In order to prepare for this endeavour, I have decided to pilot test this coffee cake with an audience I know and have them complete a survey to rate aspects of the quality of the coffee cake. This will allow me to improve my product and make the cake more marketable.
- This is just a pilot research study. None of the results will be published and there is no identifying information included in the survey that could link you to your responses.
- As a student, your participation is 100% voluntary and choosing not to participate will not affect your grade in this course in any manner.
- The only known risks to participating in this class research project concerns food allergies (read list of all ingredients), and participants may stop at any time they would like in the process. There are no benefits for the participant other than receiving free coffee cake.
- The benefit for the researcher includes gaining insight into how to improve the product, which may increase future sales.
- I would like to invite you to participate in this study. If you would like to do so, please read carefully over the Informed Consent form and if you decide to participate, please sign it and return it to me. At this point, please help yourself to a piece of cake and take the survey once you have tasted the cake.
- Please do not hesitate to ask if you have any questions prior, during, or after the project.

Appendix B: Recipe and ingredient list

Ingredients

2 cups raspberries or blueberries
 6 tablespoons brown sugar
 ¼ cup butter, melted
 ½ tsp. baking soda
 1 cup sour cream
 2 eggs
 Confectioner's sugar to decorate

1 tsp. baking powder
 2 cups all-purpose flour
 ⅔ cup sugar
 1 cup pecans (optional)
 2 tsp vanilla essence
 Pinch of salt

Directions

1. Preheat oven to 350 degrees and spray 10 in Bundt cake pan with non-stick cooking spray.
2. Mix berries and brown sugar together, set aside.
3. In a separate bowl, mix flour, sugar, baking powder and baking soda and pinch of salt, set aside.
4. In a third bowl, cream together sour cream, butter and 2 teaspoons vanilla. Mix in eggs one at a time. Stir in flour mixture until moist.
5. Sprinkle ¾ cup of berries in pan, ½ cup pecans and pour in half of the batter. Pour in the remaining berries, pecans and then the remaining batter.
6. Bake for 35–40 minutes, or until a toothpick inserted in centre of cake comes out clean. Remove cake from pan and let cool before dusting with confectioner's sugar.

Appendix C: Sample consent form

RESEARCH SUBJECT INFORMED CONSENT FORM

Prospective Research Subject: Read this consent form carefully and ask as many questions as you like before you decide whether you want to participate in this research study. You are free to ask questions at any time before, during, or after your participation in this research.

PROJECT INFORMATION

Project title:	Cake Activity Pilot Study
Project ID:	Course number
Sponsor:	Course title
Organisation:	Institution name
Location:	Classroom number/building
Principal investigator:	Instructor's name
Contact information:	Email address/phone number

1. PURPOSE OF THIS RESEARCH STUDY

- You are being asked to participate in a research study designed to test the quality of a coffee cake. The purpose of the study is to identify methods to improve a recipe

for coffee cake, to identify possible marketing strategies, and to provide students with an opportunity to participate in research.

2. PROCEDURES

- You will be verbally informed of the study, invited to participate, and asked to read and sign this consent form. If you agree to participate, you will be asked to sample a piece of cake and complete a brief survey.

3. POSSIBLE RISKS OR DISCOMFORT

- The only known or possible risk to participants relates to food allergies; all ingredients will be read aloud.

4. POSSIBLE BENEFITS

- The only possible benefit of the study to the participant is enjoying a piece of cake. The possible benefit to the researcher includes financial gain if product is marketed and sells well.

5. FINANCIAL CONSIDERATIONS

- There is no financial compensation for your participation in this research.

6. CONFIDENTIALITY/ANONYMITY

- Your identity in this study will be anonymous. You will not be asked to include your name on the survey. Results of the study will not be published for scientific purposes or otherwise. Your name will not be included in any documentation other than on this informed consent form.
- However, any records or data obtained as a result of your participation in this study may be inspected by the sponsor, by any relevant governmental agency (eg. US Department of Education), by the [University Name] Institutional Review Board, or by the persons conducting this study (provided that such inspectors are legally obligated to protect any identifiable information from public disclosure, except where disclosure is otherwise required by law or a court of competent jurisdiction. These records will be kept private in so far as permitted by law.

7. TERMINATION OF RESEARCH STUDY

- Participation in the study is voluntary. You are free to choose whether or not to participate in this study. You may also stop participating in the study at any time. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to participate. Your grade will *not* be influenced by choosing to (or not to) participate in this study.

8. AVAILABLE SOURCES OF INFORMATION

- Any further questions you have about this study will be answered by the Principal Investigator: [offer name and contact information here].

9. AUTHORISATION

- I have read and understand this consent form, and I volunteer to participate in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable Federal, state, or local laws.

Participant Name (Printed): _____ Participant Name (Signature): _____

_____ Date:

Appendix D: Cake activity survey

Coffee Cake Research Project: survey

Please complete the following survey. For questions 1–6 in the table, please circle the response option that you most agree with about the level of quality of the cake.

5 = Excellent, 4 = Above average, 3 = Average, 2 = Below average, 1 = Poor

1. Appearance 5__ 4__ 3__ 2__ 1__
2. Cake moistness 5__ 4__ 3__ 2__ 1__
3. Topping texture 5__ 4__ 3__ 2__ 1__
4. Taste 5__ 4__ 3__ 2__ 1__
5. Amount of fruit 5__ 4__ 3__ 2__ 1__
6. Overall quality 5__ 4__ 3__ 2__ 1__
7. Additional suggestions about how to improve the coffee cake:

8. Would you buy this product if it were available in stores?
Y____ N____
9. Who most often does the grocery shopping in your household?
You____ Roommate____ Other _____
10. How many days per week on average do you eat breakfast?
0__ 1__ 2__ 3__ 4__ 5__ 6__ 7__
11. How many days per week on average do you buy your breakfast outside of the house?
0__ 1__ 2__ 3__ 4__ 5__ 6__ 7__

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