Title: Teaching data analysis to the averse: a framework for educators

Authors: Christa Fouché, Allen Bartley

Christa Fouché is Associate Professor in the School of Counselling, Human Services and Social Work at the University of Auckland, New Zealand. Christa's research and teaching expertise relate primarily to capacity building in the social services workforce, with a particular focus on advancing practice research and evaluation. Dr Allen Bartley is Senior Lecturer in the same school with a research focus on transnational migration and expertise in mixed methods research training.

Corresponding author: Christa Fouche, The University of Auckland, Private Bag 92601, Symonds street, Auckland, 1150, New Zealand. **E-mail**: c.fouche@auckland.ac.nz

Key Words: Research, Training, Data analysis, Practice data, Social work research

Abstract

It remains a dilemma for social work educators to teach research so that it can be embraced as a normal part of social work practice. This paper reports on an initiative to design a research course focused on the integration of research with practice data. Drawing on developments in data-mining and techniques in secondary data analysis, social work students gain experience in conducting analysis on existing data. The paper presents the rationale for and nature of this teaching model and discusses the benefits and challenges experienced by students and staff. Access to local practice data and workforce development to parallel and support undergraduate competence is recommended.

Teaching data analysis to the data-averse: A framework for educators

Background

Social work practitioners have a professional responsibility and obligation to generate and use research in practice. The ability for practitioners to engage in research-informed practice is regarded as a core competency by many social work professional bodies globally. In New Zealand, this expectation is one of the ten key competencies required for professional registration with the Social Workers Registration Board (Social Workers Registration Board, 2014). However, this in itself does not guarantee research active practitioners. Orme and Shemmings (2010) remind us that social work has been identified as having a deficit in research capacity in both research produced and its utilization by practitioners. There has been, and still is, reluctance among many practitioners (and often educators) to embrace research. This is echoed by many social work authors leading to what Trevithick (2000, p 9) calls the 'stereotypical view' where research is considered to be irrelevant, obscure, abstract and untranslatable in terms of direct practice. This is not a new perspective though. A frequently cited and quoted 1980s article by Epstein highlighted the challenge of teaching students who hold 'anti-research attitudes' (Epstein, 1987, p.72). This article, coincidentally, appeared in the inaugural issue of this journal. Research was then, as it is now, regarded as a discrete process in which some practitioners may engage in their spare time, or to gain postgraduate qualifications. Students are not unsurprisingly, reluctant and apprehensive to engage in research, and particularly in developing skills in data analysis (Shaw, Lee & Wulczyn, 2012; Harder, 2010).

Many leading social work authors (Epstein, 1987, 2001; Fouche, 2015; Hall, 2008; McLaughlin, 2012; Orme and Shemmings, 2010) challenge educators and the academic research workforce to make research relevant, apparent and translatable in terms of direct practice. Research methods courses, as conventionally taught, reinforce student prejudices as these courses are mostly aimed at designing projects for postgraduate qualifications, with limited relevance and applicability to practice. Furthermore, university ethics approval processes are prohibitive in terms of innovative project design (especially on sensitive topics, or with vulnerable populations) within the scope of an undergraduate research course, resulting in many of these courses aiming to assist students in producing an academic research proposal. It is within this context that an innovative approach to teaching undergraduate research has been considered. A research course focused on the integration of research with practice data draws on developments in data-mining and techniques in secondary data analysis. The teaching framework will be outlined below, before the experiences of students and staff will be discussed.

Teaching framework

Students are likely to gain most benefit from research, in terms of depth of learning and understanding, when they are involved in research through active learning. This presents challenges to educators to shape curricula to enable active learning (Shaw, Lee & Wulczyn, 2012). Freymond and her collaborators (Freymond, Morgenshtern, Duffie, Hong, Bugeja-Freitas, & Eulenberg, 2014) suggest that educators need to provide opportunities for students to transform didactic research training into practical research skills. Traditionally,

students may expand their learning about research methods and techniques by undertaking their own projects, or assisting on other projects, or through work-based learning (Jenkins et al. 2003). A challenge for educators is to devise curricula that engage students to explore research activities (i.e., the 'business end' of the research process) while also ensuring that students gain critical foundational knowledge about the essential epistemological and methodological issues involved, as well as a useful grounding in a range of research approaches, strategies and methods. Healey (2005) illustrates the range of approaches available in the 'research-teaching nexus' (see Figure 1), arranging the alternatives along two intersecting axes: on one axis the options range from privileging research content or research processes and problems; the other axis posits activities that are either student focused (where students are participants) or teacher focused (where students are the audience). In the content/student focused quadrant, teaching would be regarded as research-tutored, with the curriculum emphasising learning focused on students writing and discussing papers or essays. In the content/teacher-focused quadrant, teaching would be regarded as research-led, where students learn about research findings and the curriculum is structured around teaching subject content. In the quadrants dominated by research processes, the teacher focused quadrant will be regarded as research-oriented, with the curriculum emphasising teaching processes of knowledge construction in the particular subject. The research process/student-focused quadrant will be considered research-based, with the curriculum emphasising students' inquiry-based learning. Healey suggests that disciplines engaged in professional education, including social work, tend to focus their teaching in this last quadrant. As this is the predominant model in social work programs, students tend to expect, and respond most positively to, curricula grounded in inquiry-based learning. In light of this, the pedagogical challenge in designing an effective and engaging social work research curriculum that affirms the essential linkages between practice and research is to shift focus from content- and teacher-focused learning towards student-focused inquiry-based research activities. This is the aim of the teaching model reported in this paper.

[Figure 1 here]

The undergraduate social work degree program in which we teach provides compulsory research courses which students undertake in their third and fourth years. As a teaching team, we became increasingly dissatisfied with the traditional, teacher-focused approach our own courses took to introducing social work students to the research environment. Most students feared such courses in anticipation, and many remained sceptical after completion of the essential relationship between research and their practice or professional social work identity. Research was regarded as being too difficult, too time-consuming and too far removed from the 'real' work done by practitioners in the field. At the time we began grappling with how we might design an alternative approach to teaching research, our department at the University of Auckland hosted as a visiting scholar from the USA, Irwin Epstein, who gave several presentations on the use of clinical data mining in practice research. As a passionate advocate of clinical data mining, Epstein's work was familiar to us, and we were encouraged to consider anew how clinical data mining could become a central concept in an applied research skills course focused on practice-based research activities. We determined to develop a course with an emphasis on cultivating data analysis skills in order for students to conduct their own original research involving the analysis of secondary qualitative and quantitative data *as they might do in actual practice settings*. In addition to

linking research activities with considerations of forms of practice data and data mining, the new course enabled a pedagogical shift from a content-based, teacher-focused model towards a student-focused, research-based course emphasising real research processes and outcomes.

The course represents the development of a pragmatic and robust undergraduate research teaching framework that allows greater practice relevance for new practitioners. A 'conventional' social science methods course is delivered in Year 3 of a four-year BSW qualification, with a focus on formulating researchable questions in practice contexts; creativity in methods of data collection in practice; and consideration of ethical dilemmas in non-university (practice) research. In terms of Healey's schematic, this foundational methodology and methods course remains anchored in the 'research content/teacher focused' quadrant. However, students are encouraged to view their learning in this course as an investment to be paid off in the following year. This course acts as a prerequisite for a double semester course, offered in the final year of the degree, which is exclusively devoted to data analysis. This course allows for an exploration of data mining (including the ethics and politics of accessing and using clinical practice data for research purposes) before the focus turns to skills development in qualitative analysis in Semester 1 and quantitative analysis in Semester 2. Clinical data mining is presented as using all qualitative and quantitative practice data routinely collected by agencies as *research* data (Epstein, 2010), with secondary data analysis is posed as the analysis of an existing dataset, previously collected by another researcher, usually for the purpose of answering a different research question (Miller and Brewer, 2003).

In the course, students are given access to large and robust datasets, and develop their data analysis skills through work on their own secondary data analysis projects in both qualitative and quantitative environments. Two studies with topics relevant to social work practice are selected each year, with studies using a mixed methods approach preferred, as mixed method datasets enable students to examine data from the same study over both semesters and this enriches the findings and the experience for the students. The focus is on mastering the process and techniques of data analysis, rather than making a significant contribution to any one research topic. The students can select any one of two datasets made available to them in the given year; they are not given the option to select their own datasets from the archive as some level of permission and an access agreement to use the data for teaching purposes is negotiated on their behalf in advance. For the qualitative component of the course, they are given access to a substantial number of transcripts from the selected dataset, and for the quantitative component, they are able to access survey data. They also have access to demographic information and a user guide or summary of the project as is made available with each dataset.

In terms of the teaching framework, the pedagogy of the full-year course drives towards the student-focused, research based quadrant, with students responsible for developing their own research questions from the available datasets, conducting the analysis and reporting and justifying their conclusions with reference to relevant bodies of professional and scholarly literature (Figure 2). At the same time, students are encouraged to reflect on the practice settings with which they have become familiar (via fieldwork placements), in terms of the forms of practice data that could be amenable to data mining projects.

[Figure 2 here]

Analysing practice data

There are countless publications on techniques for data analysis, ranging from highly complex statistical techniques for analysing quantitative data, through commonly accepted procedures for analysing qualitative data, and explaining various computer software options to facilitate these processes (Bazeley & Jackson, 2013; Acton and Miller, 2009). Similarly, there are various models for teaching data analysis, depending on the techniques to be mastered (Dunn, Smith & Beins, 2007). It is not surprising that the phase of data analysis can seem daunting to some practitioners and students; statistical formulae and the mechanics of causation and inference is not everyone's language. And even considering qualitative analysis as '…an ongoing process involving continual reflection about the data, asking analytic questions, and writing memos throughout the study' (Creswell, 2003, p 190) can seem daunting to inexperienced researchers. Students gain reinforcement and reassurance by drawing on knowledge and skills acquired in both the fundamental research methods course from the previous year and from their social work fieldwork placements, in which they have encountered various forms of practice data.

One of the most important innovations in recent years that facilitates the ordering and categorizing of data has been computer assisted qualitative and quantitative data analysis software by means of which researchers can creatively manage and make sense of their data. Computer-assisted qualitative data analysis software (or popularly referred to as CAQDAS), has been an area of growth in terms of both the range of programs that are available for this purpose and the numbers of people using them. The most popular computer-assisted qualitative data analysis software options include NVivo and ATLAS.ti. Quantitative data analysis software options are extensive and overwhelming, as statistical packages have become a growing commercial enterprise. SPSS is the package used widely by social researchers, but there are a range of open source packages available. Competent use of Microsoft Excel provides affordable access to options for quantitative data analysis. Even though students may be resistant to mastering the software, the advantages of using data analysis software in practice include time-saving activities for managing huge amounts of qualitative data, and increased flexibility and improved validity of data. Qualitative secondary data analysis is therefore taught in the course reported in this article, by introducing students to a software program (NVivo). As mentioned earlier, they are given access to a substantial number of transcripts with narratives on topics that are unfamiliar, but of interest to social work. For the quantitative secondary data analysis, students are introduced to a quantitative software program (SPSS) with access to very large samples. The possibilities for statistical analysis match students' existing competence, in that they are able to conduct only descriptive analysis if that seems challenging, whereas students with previous experience of statistics or advanced knowledge of research analysis are offered the opportunity to advance to inferential statistical analysis. To enable the students to engage with real data for analysis, datasets are sourced from the UK Data Service (http://ukdataservice.ac.uk), a repository for data produced by publicly-funded scholarly research. For the qualitative analysis, transcripts of semi-structured interviews and focus group interviews are made available. For the quantitative analysis, survey data are sourced – though, as mentioned above, for continuity over the full year we have preferred to provide students with mixed-methods studies. Widely varying topics were selected over the

past three years since this new teaching framework was put in place, including: secondary school teachers' experience and perceptions of violence in the workplace; social capital, social participation and identity; cultural capital and social exclusion; experiences of love and domestic violence in heterosexual and same-sex relationships; employees' experiences of the changing nature of employment relations; prevention and coping in child and family care; and a feasibility study for a schools-based, peer-led, drugs prevention program. Some of the questions that developed from these datasets are listed as examples in table 1.

[Table 1 here]

The goal of both qualitative and quantitative elements of the course is that students are able to approach large amounts of unfamiliar secondary data, engage in a process of familiarization, develop original research questions, and answer those questions via rigorous analysis of the available data. All the while, students are also being asked to reflect on the agencies in which they have experienced their fieldwork placements; the kinds of practice data routinely collected and handled by social workers in those agencies; the legal, ethical and pragmatic steps that would be required for social workers in agencies to access those data in a clinical data-mining exercise; and the sorts of pressing practice questions facing those agencies that could be answered through a rigorous and systematic analysis of the data they already hold. In this way, students are encouraged to conceive of research as an essential extension of the normal, daily routine of practitioners in the field, and a vital element in the core business of critical reflection and striving to continually fortify agency practice to support the best possible outcomes for clients, their families and communities.

Benefits

Changes to our teaching model were motivated at least in part by unease and frustration that, after taking traditional research courses over the final two years of their BSW degree, students remained ardently dismissive of the idea of engaging in research themselves as social work practitioners. Having engaged in inquiry-based research learning, students are challenged to reconsider their negative expectations as they exercise their curiosity and apply both their imaginations and new-found skills to address research problems. Many students unexpectedly have found themselves cast in the role of 'research expert' and ambassador when they begin discussing the question of practice-based research with practitioners and managers in their fieldwork settings. Numerous students placed in small not-for-profit or community-based agencies have reported to us that once they asked about mining clinical data for research purposes they were approached by practice managers, under pressure to produce evidence to support applications for desperately needed funding, who lacked the capacity within their organisations to do such work themselves. The knowledge and skills these students might previously have dismissed as irrelevant become reassessed as vital to the continued viability of the agencies in which they will practice.

No formal evaluation of this model has yet been done; a project has been established and ethics approval is underway. We acutely feel the need to capture the experiences of our participants – the students – in a robust way as to inform the refining of the teaching model. This is a work in progress. However, routine course evaluations have been done annually and the feedback from the three cohorts who have completed the programme have been accessed retrospectively. Three main benefits were reported by staff and students during these routine course evaluations: students learn about research in the most stimulating way

possible – by becoming researchers; they are better able to integrate considerations of practice and research; and they become more prepared to apply a research orientation to practice settings.

Firstly, the inquiry-led teaching model creates an experience of research with large and high-quality datasets in the scope of one course. Rather than merely learning about research, or even designing a hypothetical project they may never actually conduct, this teaching model gives students the opportunity to participate in the aspect of the research process where discovery is pre-eminent. Students engage with datasets that are far larger, and address questions much more comprehensively, than they could design and implement for themselves in a single semester – even if the University ethics review process were to accommodate such student projects, which it does not. Students expressed appreciation for not being expected to collect their own data and saw the advantages of access to a large dataset, as illustrated by the following statements:

> 'I was amazed by how we all came up with different studies but at the same time how complimentary the findings were to build a more complete picture' (Student W).
>
> 'Even though all of us used the same dataset, we all found different things because we asked different questions. There is a lot more to learn from using different lenses' (Student N).
>
> 'When I read research papers, I can now ask intelligent questions, where in the past I just glanced over the data section and went straight to the discussion. I attended a conference while on placement and was actually able to engage in conversations about the data with the presenter - it is so cool!' (Student A).

Secondly, there is an emergence of an integrated 'researcher' identity: students come to regard practice-based research as relevant and practical. Having achieved a form of data mining (i.e., secondary data analysis) in both qualitative and quantitative environments, students find themselves actively asking practice-based research questions that arise in the agencies with which they are familiar, based in the work they do and the data those agencies collect. Students regularly resonate with the claim made by Epstein that one consequence on agencies of a data-mining ethos is a new-found imperative for robust systems for collecting and recording high quality practice data: full of the zeal of new converts, students have reported to us the many conversations they have had with colleagues and managers in practice settings in which they advocate for the need for improved systems to capture more robust data, for both practice and research purposes. Several students have even been offered short-term employment contracts to administer those changes in their fieldwork agencies. Two students made the link between the research course and practice:

> 'I was so frustrated that I was unable to do certain analyses due to only having access to categorical data [from the secondary dataset], that I have recommended to my practice supervisor they capture [information about a particular variable] as continuous data. (Student J).

> ‘The most profound learning [in the course] was that the research process is not linear. You have to keep coming back to your question and the design when considering analyses. It is frustrating, but it is so much like [social work] practice’ (Student M).

Finally, students develop confidence in applying research concepts to practice settings. They become comfortable with asking questions of practice data. As indicated above, a number of students reported being amazed at how seemingly uninteresting datasets allowed for their individual interests to be explored. They also reported how they subsequently (surprisingly) found themselves asking questions related to their interests of agency data and questioning details when data are presented.

> ‘Yes, of course it [practice research] takes time on top of the huge case loads, but we can’t just say, “we don’t have time to do research” anymore. If we don’t produce the data, we won’t be funded. And I can see myself doing it: I know the questions the social workers are asking about their practice, and I know the data we collect can answer those questions’ (Student B).

> ‘As soon as I started thinking about clinical data mining at [NGO providing residential treatment for adolescent substance-abusers], I realised that they hold so much data! Each member of the clinical team writes up notes on every interaction with each client, and all the care staff submits reports at the end of every shift. This is on top of the regular reporting using standardized psycho-metric instruments. They really are sitting on a gold mine; I can’t believe that no-one has thought to organize all those reports into usable research evidence before now’ (Student D).

Challenges

The challenges reported by students in the routine evaluations and informed by our own observations are three-fold: the limitations of the data; the limited benefit to practice; and limited workforce capability in practice to advance practice learning.

As outlined earlier, the datasets we were able to source annually from the UK Data Service were on topics of interest to social workers. Students learn well the lesson, not necessarily willingly or happily, that a central limitation to projects involving secondary data is that projects are bounded by the interests of the original researchers. Some students find the datasets available to them of huge interest and are able to promptly link it to previous learning and to raise new questions. However, they are sometimes disappointed about the lack of data within the existing dataset to answer their preferred question. It is not uncommon for students to ponder how easily their research question could have been addressed if only the researchers included one additional statement or prompt in their survey or interview. This, naturally, is part of their learning about the limitations of secondary data as opposed to primary data collection. More frustrating is the lack of crucial information about the project, the population, the design, the timeline or other aspects that may enable more robust interpretation of the findings. Even though we take care in selecting datasets that provide the most comprehensive information possible, you do not know the quality of the dataset until you delve into it.

Furthermore, while access to these datasets has been an enormous asset, these are not *practice* data. Students learn the skills which they may, in time, apply to the mining of

clinical data for the purpose of advancing practice knowledge, but this still requires a leap of the imagination, as our data-mining course has not been able to provide them with clinical data on which to practice. This has been frustrating for students, some of whom have expressed the desire for access to actual clinical data.

> 'It is a little frustrating to think we have done all this hard work and developed all these insights, but it is of no use to anyone; the reports are basically discarded once assessed' (Student R).

Not only will it be beneficial to students to engage with relevant practice data to enforce the nature of the experiential learning, but it will also be of benefit to practice if the collective insights developed from the data were useful to agencies. In fact, this is the one dimension of the course that reinforces negative behaviours – the lack of sharing of findings with practice colleagues and the lack of consideration of how important findings can be disseminated and utilisation in practice encouraged. As the topics of the datasets and the related findings have limited relevance to some practice contexts, this is not easily resolved, other than to access actual practice data as opposed to archived datasets on 'foreign' topics. This links to the third challenges raised.

To advance real practice learning, research questions should have relevance to the students' placement agencies, so that findings can be disseminated and utilisation encouraged. This requires the experience to be supported by practice expertise. Some students become 'research ambassadors' for the agencies where they do placements, but as with fieldwork experiences, these students need supervision to have their newly acquired skills tested and refined. This requires experienced practitioner-researchers in practice, availability of 'clean' datasets and capacity to help interpret findings and support reflections. Access to this in practice seems very limited or at best of varying quality. Even some students who have reported to us their excitement at encountering positive fieldwork responses to the question of practice-based research have been disheartened at the prospect that, with only one or two semesters of (limited) research experience, they could be the most experienced researchers in their agencies!

Conclusion

As academic researchers and social work educators we want to be satisfied that our teaching has applicable utility for our students – in other words, that they will use the things they learn as a result of engaging in our research courses. The determination to see our social work graduates embark on their professional careers with both the skills and the inclination to incorporate rigorous research as part of their practice inspired our decision to redesign the curriculum to focus on secondary data analysis skills aligned to the ideals of clinical data mining. The commitment to changing course content was coupled with a shift in the teaching model, towards student-initiated original research projects involving very large mixed-methods datasets. Nearly 150 students have conducted such projects in the three years since the revised courses have been offered and, while the courses have successfully established the integrated relationship between social work practice and research, the teaching model has highlighted several pressing professional issues.

First, practice research partnerships are needed to access local datasets. While acknowledging the sensitivities involved in accessing practice data, if an agreement of

collaboration could be developed that included the data to be de-identified (i.e., unable to be tracked to identifiable individuals or groups, or indeed to specific agencies), aspects the risk to either clients or agencies would be minimal. On the other hand, the potential benefit to agencies and practitioner communities that could be realised by having successive teams of research students mining agency data to answer useful practice questions could be considerable. Significant hurdles would need to be addressed before any agency would countenance the possibility of such a partnership: there are ethical issues about the use of client data for research purposes when they were collected for other uses; the sheer task of anonymizing large numbers of client files, and then screening these for data-entry and record-keeping fidelity would be extremely labour intensive; and agencies would need to be satisfied that the sharing of their records would not lead to risk of criticism of their practices, or the effectiveness of the services they provide. The potential benefits seem to outweigh the commitment required to ensure basic processes are developed to ensure this is possible. Currently we are working with a large service provider to consider the feasibility of such a data-sharing arrangement: however a positive cost/benefit analysis has yet to be convincingly demonstrated. There are models available internationally of negotiated access to large datasets that multiple cohorts of students can interrogate to mutual benefit. This is not yet a feasible option in New Zealand.

Secondly, if social work agencies were to partner with the University to make practice data available for research purposes, there is seemingly little capacity in most social work agencies – particularly in the not-for-profit sector – to foster a rigorous research culture within the practitioner community. Workforce development to parallel and support undergraduate competence is inadequate. As with social work field education, where the expectation is that practitioners-in-training will be provided with the opportunity to apply classroom learning to real-life contexts under the supervision of a seasoned social worker, agencies are expected to provide students with valuable exposure to observe and participate in research-informed practice and practice-informed research. While these opportunities are still very limited, the good news is that pilot projects are developing in new and exciting ways and opportunities for research competence are increasingly solicited. Practice managers are growing progressively more mindful of the need to retain the capacity within their organisations to produce and maintain robust forms of evidence regarding their practice. It is our hope that access to local practice data and workforce development to parallel and support undergraduate and practitioner research competence will become a growing reality. Even though educators, students and practitioners alike may not be converted to the benefits of research (and particularly data analysis) for practice, some attitudes are at least growing increasingly ambivalent rather than ‘anti-research’ as claimed by Epstein (1987). Whilst Epstein posed strategies to teach ‘research to the reluctants’ (Epstein, 1987), we suggest a framework to teach data analysis to the averse and we will continue to seek partnerships to enable this not only as an effective learning experience, but also one of benefit to practitioners and agencies.

References

Acton, C. & Miller, R. (2009). SPSS for social scientists (2nd ed.). Basingstoke: Palgrave Macmillan.

Bazeley, P. & Jackson, K. (2013). Qualitative data analysis with NVivo (2nd ed.) London: Sage.

Creswell, J. (2003). Research design: Qualitative, quantitative and mixed methods approaches. London: Sage.

Dunn, D. S., Smith, R. A., & Beins, B. C. (Eds.). (2007). Best practices in teaching statistics and research methods in the behavioral sciences. New Jersey: Lawrence Erlbaum Associates.

Epstein, I. (1987). Pedagogy of the perturbed: Teaching research to the reluctants. Journal of Teaching in Social Work, 1(1), 71-89.

Epstein, I. (2001). Using available clinical information in practice-based research: Mining for silver while dreaming of gold. Social Work in Health Care, 33(3/4), 15-32.

Epstein, I. (2010). Clinical data-mining: Integrating practice and research. New York: Oxford University Press.

Fouche, C. (2015). Practice research partnerships: Making a difference. Bristol, UK: Policy Press.

Freymond, N., Morgenshtern, M., Duffie, M., Hong, L., Bugeja-Freitas, S. & Eulenberg, J. (2014). Mapping MSW research training. Journal of Teaching in Social Work, 34(3), 248–268.

Griffiths, R. (2004). Knowledge production and the research-teaching nexus: the case of the built environment disciplines. Studies in Higher Education, 29(6), 709-726.

Hall, R. (2008). Applied social research: Planning, designing and conducting real-world research. Sydney: Palgrave MacMillan.

Harder, J. (2010). Overcoming MSW students' reluctance to engage in research. Journal of Teaching in Social Work, 30(2), 195-209

Healey, M. (2005). Linking research and teaching: exploring disciplinary spaces and the role of inquiry-based learning. In R. Barnett (ed.), Reshaping the University: New Relationships between Research, Scholarship and Teaching (pp. 67-78). London: McGraw Hill / Open University Press.

Jenkins, A., Breen, R., & Lindsay, R. with Brew, A. (2003). Re-shaping Higher Education: Linking Teaching and Research. London: Routledge.

McLaughlin, H. (2012). Understanding social work research (2nd ed.). London: Sage.

Miller, R.L. & Brewer, J.D (2003). The A-Z of Social Research: A Dictionary of Key Social Science Research Concepts. London: Sage.

Orme, J. & Shemmings, D. (2010). Developing research based social work practice. London: Palgrave MacMillan.

Rubin, D., Valutis, S. & Robinson, B. (2010). Social work education and student research projects: A survey of program directors. Journal of Social Work Education, 61(1), 39-55.

Shaw, T. V., Lee, B. R. & Wulczyn, F. (2012). “I thought I hated data”: Preparing MSW students for data-driven practice. Journal of Teaching in Social Work, 32(1), 78-89.

Social Workers Registration Board. (2014). The SWRB ten core competence standards. Wellington, New Zealand: Social Workers Registration Board. Retrieved from http://www.swrb.govt.nz/competence-assessment/core-competence-standards

Trevithick, P. (2000) Social work skills: A practice handbook. Buckingham: Open University Press.

Table 1: Student projects developed from archived datasets

Archived datasets	Selected examples of student projects from the particular dataset
Secondary school teachers' experience and perceptions of violence in the workplace	• The relationship between experiences of types of violence and job satisfaction • The effects of physical and non-physical violence on teachers' attitudes towards their profession • Teacher's experience of violence in the workplace on teacher retention rates • Teachers' perceptions of using reasonable force to restrain pupils as an effective method to prevent violence in schools • The relationship between the incidence of reporting violent experiences and the type of violence that occurred
Social capital, social participation and identity	• The personality traits of divorced and non-divorced individuals • The effect of marital status on reported life satisfaction • The relationship between mental wellbeing and physical health • The social identities of older people who have remained single and childless
Cultural capital and social exclusion	• The impact of having a school aged children in the household on the parent's cultural capital • The contributing factors for older people's participation in social and physical activities
Experiences of love and domestic violence in heterosexual and same sex relationships	• Common positive factors that contribute to the longevity of intimate relationships • Causative factors of abuse within lesbian relationships • The importance of personal power in perpetuating domestic violence • Factors that influence females of all sexual orientation to stay in detrimental relationships • The role of age differentials in the victimization of younger gay and lesbian partners
Employees' experiences of the changing nature of employment relations	• The difference between males and females in their views of advantages and disadvantages of being self employed • Relationship between the sharing of household duties and partners' declared employment status • The extent to which, and ways in which, flexible employment arrangements benefit working women
Prevention and coping in child and family care	• Coping strategies utilized by single mothers with children who have behavioral problems • The impact of divorce on the children of the custodial parent • Ways in which difficult child behaviors can impact on a mother's ability to parent the child • Psychosocial impacts for mothers of sons with ADHD
Feasibility study for a schools-based, peer-led, drugs prevention program	• The influence of environmental and social factors outside of school on the likelihood of youth smoking • Children living with cannabis users' perceptions of cannabis, cannabis sellers and cannabis users • Influence of tobacco smoking on tendencies to consume alcohol or cannabis • Gender attitudes and behaviors towards smoking and cannabis use

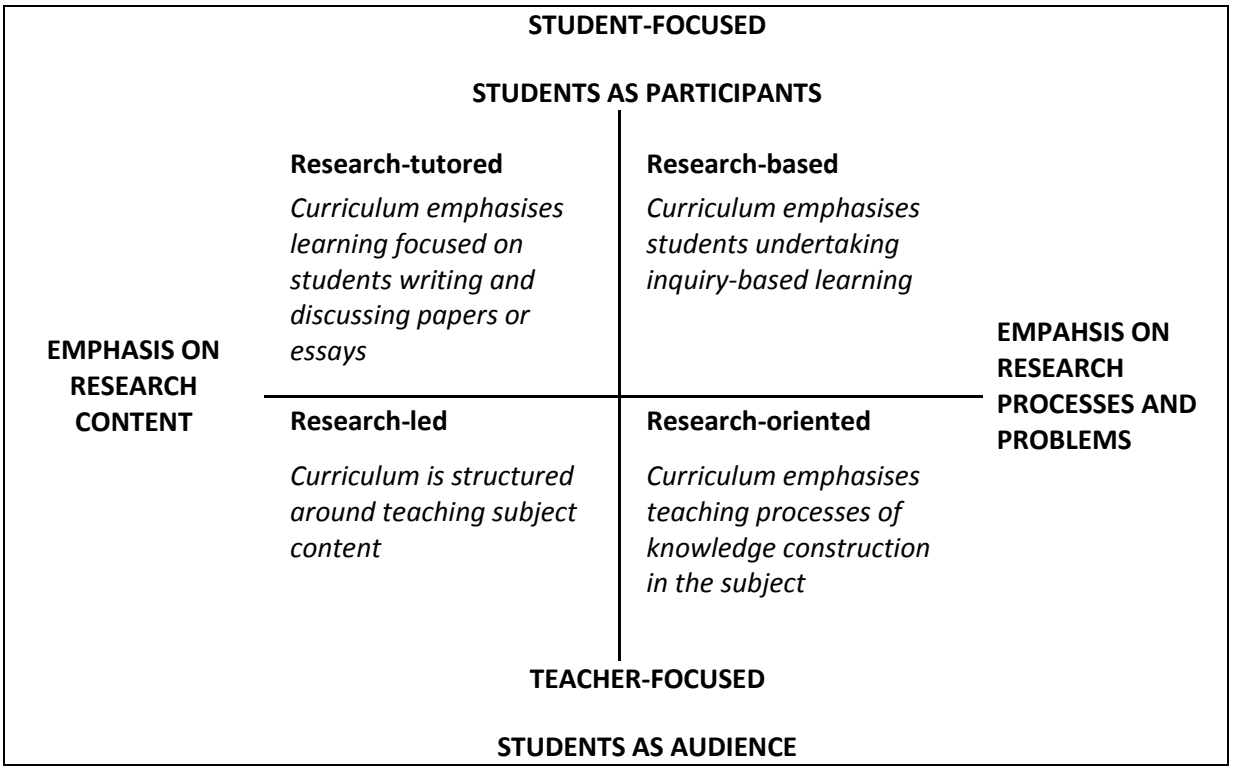

Figure 1: Curriculum design and the research-teaching nexus (Source: Healey 2005:70)

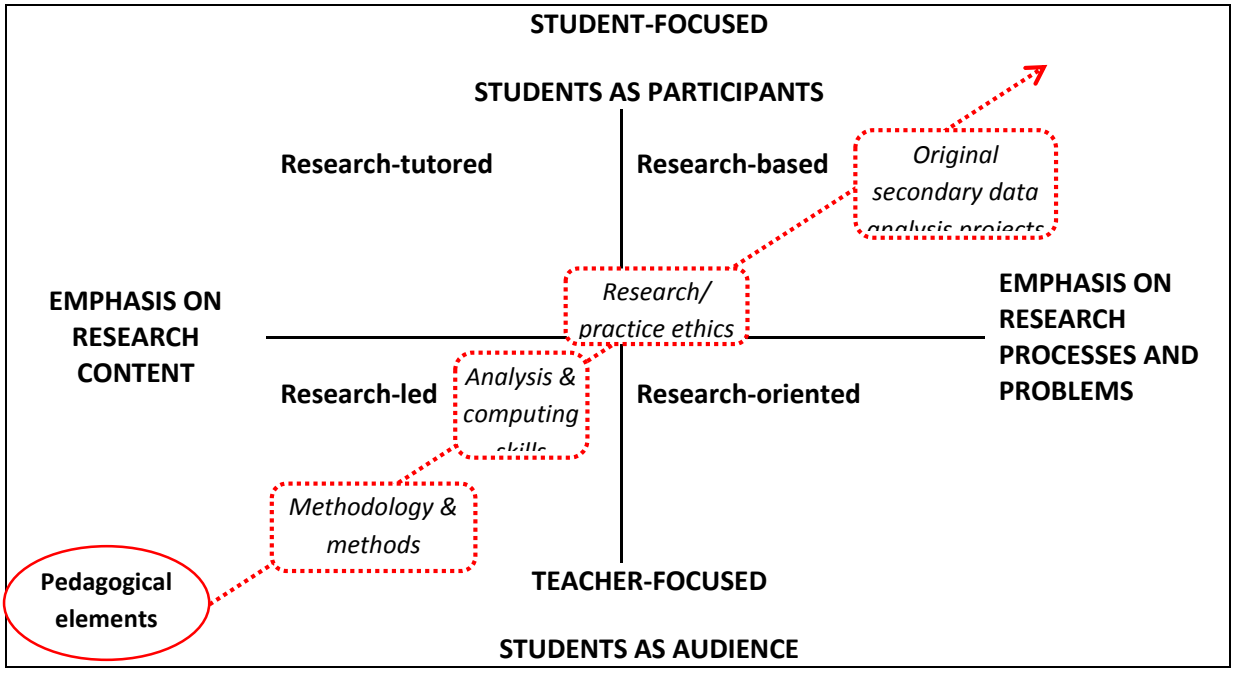

Figure 2: Pedagogical elements of research teaching on the teaching-research nexus