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Case Study Methodology: Flexibility, Rigour, and Ethical Considerations for the Scholarship of Teaching and Learning

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Abstract
Individuals and teams engaging in the scholarship of teaching and learning (SoTL) in multidisciplinary higher education settings must make decisions regarding choice of research methodology and methods. These decisions are guided by the research context and the goals of the inquiry. With reference to our own recent experiences investigating pedagogical and curricular practices in a pharmacy program, we outline case study methodology as one of the many options available for SoTL inquiry. Case study methodology has the benefits of flexibility in terms of the types of research questions that can be addressed and the data collection methods that can be employed. Conducted with proper attention to the context of the case(s) selected, ethical treatment of participants, and data management, case studies also have the necessary rigour to be credible and generalizable. In the matter of generalization, however, we recommend that the readers of a case study draw their own conclusions about the applicability of the findings to other settings.

Les particuliers et les groupes qui sont actifs dans le haut savoir en matière d'enseignement et d'apprentissage (ACEA) dans les milieux pluridisciplinaires de l'enseignement supérieur doivent prendre des décisions en ce qui concerne le choix des méthodologies et des méthodes de recherche. Ces décisions sont guidées par le contexte de la recherche et par les objectifs de l'interrogation. En nous basant sur nos propres expériences récentes quand nous avons examiné des pratiques pédagogiques et curriculaires dans un programme de pharmacie, nous décrivons la méthodologie des études de cas comme l'une des nombreuses options disponibles pour les interrogations en ACEA. La méthodologie des études de cas a l'avantage d'être souple en ce qui a trait aux types de questions de recherche qui peuvent être étudiées et aux méthodes de collecte de données qui peuvent être employées. Quand elles sont menées avec l'attention requise pour le contexte des cas choisis, le traitement éthique des participants et la gestion des données, les études de cas présentent également la rigueur nécessaire pour être crédibles et généralisables. Toutefois, en ce qui concerne la généralisation, nous recommandons que les lecteurs d'une étude de cas tirent leurs propres conclusions concernant le caractère applicable des résultats à d'autres situations.

Keywords
case study methodology; scholarship of teaching and learning; research ethics

Faculty members seeking to engage in the scholarship of teaching and learning (SoTL) face many hurdles, one of the most daunting of which can be lack of familiarity with the myriad methodologies of educational research (Hubball & Clarke, 2010; Pearson & Albon, 2013; Regehr, 2010). Based on our own successful experiences investigating pedagogical and curricular practices, in this Research Note we outline case study methodology as a useful approach for individuals or teams conducting SoTL inquiry in multidisciplinary higher education settings.

As with any form of research, SoTL inquiry requires that the methodology used is appropriate to the context, as well as the research goal(s), which may be to answer a question, understand an issue, or develop theory in order to transform educational practice. There is lack of agreement regarding whether case study is, in fact, a methodology in the same sense that, say, action research or experimental design are methodologies, but we treat it as such here. Case studies are also sometimes assumed to be qualitative (e.g., Creswell, 2007; Merriam, 2009), but many scholars suggest that, while qualitative methods are more usual, quantitative methods can be used in case studies, either alone or in mixed methods approaches (Cousin, 2009; Palys & Atchison, 2014; Stake, 1995, 2010). What is common in case studies is the use of multiple methods to allow for in-depth examination of a complex singularity, often a person or program, in its natural setting. Rarer, but not out of the question, is the inclusion of an intervention in a case study.

We agree with Yin's (2014) assertion that case study methodology should be considered when the goal is to investigate "how" and "why" questions about contemporary events and where there are many variables of interest and limited ability to exercise control in the setting. A broad comparison of case study with other methodologies often used in SoTL research is provided in Table 1, with reference to the purpose, unit of analysis, and data sources typical of each methodology.

Table 1
Comparison of Case Study with Other Research Methodologies

Methodology	Purpose	Unit of Analysis	Data Sources
Case Study	In-depth description and analysis of a case	An event, person, or program	Multiple sources, such as interviews, observations, and documents
Action research	Investigating and improving practices	A classroom or a community	Documents and interviews
Appreciative inquiry	Investigating and improving practices	Program and/or pedagogical contexts	Documents and interviews
Narrative research	Exploring the life of an individual	One or more individuals	Interviews and documents
Phenomenology	Understanding the essence of an experience	Several individuals who have shared an experience	Interviews, and may include documents, art, and observations
Grounded Theory	Developing theory from field data	A process, action, or interaction involving many individuals	Interviews with a relatively large number of individuals
Ethnography	Describing and interpreting a culture-sharing group	A group that shares a culture	Field observations and interviews collected over an extended time
Experiment	Testing a theory or evaluating an intervention	A relatively small number of individuals	Quantitative data collected under controlled conditions
Survey	Generalizing to a population	A relatively large number of individuals	Quantitative data collected via interviews or questionnaires

Note. Adapted from Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed., pp. 78-79) Thousand Oaks, CA: Sage.; and Hammersley, M., & Gomm, R. (2000). *Introduction*. In R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case study method* (p. 4) Thousand Oaks, CA: Sage.

Types of Case Studies

Different scholars have suggested different typologies for case studies. Stake (1995) suggests three types of case study based on case selection: the *intrinsic* case study, where the case is given, rather than chosen, as commonly occurs in program evaluation; the *instrumental* case study, where the case is selected for its ability to contribute to a general understanding of a phenomenon; and the *collective* case study, an extension of the instrumental case study, where two or more representative cases are selected. In contrast, Yin (2014), suggests three types of case study based on study purpose: the *exploratory* case study, a form of pilot study to inform subsequent research; the *descriptive* case study, which provides a thorough, contextualized description of a phenomenon; and the *explanatory* case study, intended to shed light on causal factors leading to particular events. Used together, these two typologies are useful for characterizing case studies and assessing the applicability of findings in other settings.

Benefits and Challenges

One of the great benefits of case study methodology in SoTL inquiry is the flexibility offered in terms of data collection methods. This is not to say that "anything goes," as the method(s) used should always be appropriate to the aims of the inquiry; however, it does mean that the researcher is not restricted by methodological traditions. As Shulman (1997) reminds, though, SoTL researchers must be aware of the inherent ontological and epistemological commitments in the methods chosen. Also, the use of multiple data sources common in case studies naturally encourages good practices of in-depth analysis and triangulation for the purposes either of verifying findings or providing richer detail about the case (Mathison, 1988; Stake, 2010). Of course, the volume and variety of data collected also demand meticulous record keeping and maintenance of what Yin (2014) refers to as a chain of evidence.

One caution with case studies is the extent to which findings are generalizable or transferable to other settings. This will depend in part on the context and nature of the case and how the case has been chosen (Flyvbjerg, 2006; Kennedy, 1979). Nevertheless, a case is usually representative in some way, either through its typicality or atypicality, of a broader group of cases, and it is not unusual to find general understandings from particular cases. Like Stake (2010), we feel the reader plays an important role generalizing from a case study. A detailed description of the context of the case is, therefore, an essential component in a case study report and will guide others in determining for themselves the appropriateness of generalizing case study findings to other contexts (Gerring, 2007; Mejía, 2010; Stake, 2010).

Ethical Considerations

SoTL inquiry using case study methodology can present many ethical challenges, which are frequently overlooked (Stockley & Balkwill, 2013). If the case study includes data collection through interviews or other methods involving people, it is essential that participants are treated with respect, dignity, and care throughout. For example, Tri-Council ethical standards require that consent be freely given, informed, and ongoing, and that harms associated with participating or opting out of participating be prevented or mitigated (Canadian Institutes of Health Research, 2010). Confidentiality must be protected and it is usual to protect the identity of individuals and research locations, although the necessity of anonymity has been questioned (Nespor, 2000;

Walford, 2005). Particular care needs to be taken when investigating one's own curriculum or pedagogical practices, where the participants are one's students or colleagues. Dual roles and power dynamics are commonly at play in SoTL inquiry, confidentiality may be hard to maintain during day-to-day interactions, and anonymity of location is a virtual impossibility when disseminating findings (The University of British Columbia Behavioural Research Ethics Board, 2003). Thus we encourage SoTL researchers to obtain the advice of, and, as necessary, formal review by, their institutional research ethics board prior to undertaking a case study.

One Case, Two Case Studies

We have recently completed two case study projects, both situated in the Faculty of Pharmaceutical Sciences at The University of British Columbia (UBC). The first study examined the place of the basic pharmaceutical sciences in the contemporary pharmacy curriculum, and addressed three research questions: (a) What has been and currently is the scope and depth of the basic pharmaceutical sciences in the BSc(Pharm) program at UBC?; (b) What are the perspectives of pharmacy educators on the role and status of the basic pharmaceutical sciences in this program?; and (c) What are the curriculum and pedagogical practices of those teaching the basic pharmaceutical sciences in this program? The second study focused on understandings of curricular integration and their impact on the curriculum. Two research questions were addressed: (a) What conceptions of curricular integration are held by those planning, delivering, and receiving an undergraduate degree program?; and (b) How did those conceptions contribute to the development of areas of convergence and divergence between the espoused, enacted, and experienced curricula[1]?

Drawing on Hubball and Burt's (2004) model for developing and implementing learning-centred curricula in higher education as a conceptual framework, both studies employed a triad of methods typical in case studies, namely context-specific interviews, document analysis, and observations. The first, however, was an intrinsic explanatory case study, with the research questions arising from personal experiences with the complexities of the UBC BSc(Pharm) curriculum. The second was an instrumental explanatory case study, with the research questions arising from a more general interest in structure and function of curricula for higher education programs. For these case studies, the UBC BSc(Pharm) program was considered a typical case in the health sciences and selected for pragmatic reasons such as ease of access and low cost. By using the same case and similar data sources, we found it natural to work as a team to develop analytic strategies and to validate findings through independent analysis of portions of data, a practice we would recommend in SoTL inquiry.

Although subject to various limitations associated with the research design and the methods employed, such as reliance on self-report in interviews and researcher's subjectivity in field observations, we feel our choice of case study methodology allowed us to elucidate nuanced findings about our program-level inquiries. These included detailed characterizations of the fundamental differences in worldviews of basic science and clinical faculty members and between pedagogical intentions and actions in a program of study in the health sciences. Full reports of our findings are available elsewhere (Albon, 2014; Pearson, 2014).

[1] The *espoused curriculum* refers to the curriculum intended by curriculum planners, the *enacted curriculum* is that which is implemented or taught by instructors, and the *experienced curriculum* is that which is learned or achieved by students (Bath, Smith, Stein, & Swann, 2004).

Conclusion

Methodological choices abound, with the case study being just one of many options for individuals or teams engaging in SoTL inquiry. As with any methodology, rigour is essential at all stages in a case study, from selecting the appropriate methodology and methods to address the research aims to using multiple methods for triangulation purposes, keeping meticulous records, and inviting independent analysis to verify findings. We have appreciated case study methodology in our own research for its emphasis on developing a thorough understanding of the context of the case(s) selected and for the flexibility afforded in the types of research questions that we were able to address and the range of data collection methods available to us. The ethical considerations we have raised here are not unique to case study methodology, but rather are common to all SoTL inquiry and are often not addressed as fully as they should be. Of the references we've cited, we would particularly recommend Cousin (2009), Palys and Atchison (2013), Stake (1995, 2010), and Yin (2014) for those wishing to expand their understanding of case study and other research methodologies.

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