The best of both: Harnessing the potential of repurposing data sets in work-integrated learning research

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INTRODUCTION

Quality research is essential to ensuring quality teaching in Work-Integrated Learning (WIL), and underpinning quality research is robust data gathering and handling. As qualitative data can be expensive and time-consuming to collect, it is useful to consider how we might harness the potential of existing data sets, in the same way that meta-analysis does for quantitative data. This paper will explore the potential for re-purposing data sets, drawing on two data sets collected as part of different research projects in WIL.

Specifically, our research seeks to understand student emotions in WIL. It uses two existing data sets that were collected under very different conditions and for different purposes. The first data set features the emotions experienced by WIL students in New Zealand, gleaned from reflective journals. Sport students were asked to write a weekly reflective journal during their time on placement. From the group of 92 third year students 38 gave permission for their reflective journals to be accessed for research purposes. This was one of the data collection methods used in a larger research project exploring critical reflection in cooperative education (Lucas, 2015). The second data set is based on a series of interviews with academic and workplace supervisors in Australia (n=28), New Zealand (n=5) and Canada (n=2) and taps into staff perceptions. This was an exploratory study on debriefing in WIL, part of which sought to investigate if and how supervisors used debriefing to assist students process emotions, as well as gauging the types of emotions students were experiencing and the triggers for those emotions. The supervisors were involved in the delivery of WIL programs across a diverse range of disciplines and professions (Winchester-Seeto & Rowe, 2019).

The research we are undertaking raises methodological challenges, dilemmas and questions that will be explored in this paper:

- What are the benefits and risks when repurposing data collected for completely different studies?
- What are the benefits and limitations of using a multi-method approach, e.g. incorporating different kinds of qualitative data, such as student reflections and staff interviews?

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- What are the advantages and disadvantages of analysing a single combined data set, versus that of interrogating data sets independently?
- Are both approaches valid?

Many of the observations and questions raised below reflect the dilemmas perceived by the three authors, based on their own experiences from many years of publishing in WIL.

REPURPOSING AND REUSING DATA

Repurposing of research data can be described as the utilisation of a dataset for a purpose that was not the original intention of the research when it was undertaken (Fox, 2004; McKay, 2014). The practice of repurposing is common to many science and management based areas where large datasets are collected and stored, including biomedicine (Piwowar & Chapman, 2008), healthcare (Bonde et al., 2019), biology (Baker, 2012), science (Palmer et al., 2011) and business management (Castellanos et al., 2017). Collection of all forms of data is expensive requiring funding, either private or public, therefore maximum utilisation of data for the public good is desirable (McKay, 2014). To date the literature on the application of repurposing in qualitative research, particularly in the context of WIL, is sparse and relatively new.

Unlike quantitative data, that relies on replication for validity, qualitative data, such as interviews, cannot be reproduced as it is bound to a particular time, place and person or people. Therefore, the notion of "fit for purpose" should be considered before embarking on repurposing WIL datasets. The preservation of the original data is necessary and done by copying the existing dataset or the parts required. It needs to be clear how the data was initially generated to ensure the credibility, appropriateness and authenticity for accurate and meaningful future applications.

There are several benefits of repurposing data as it provides researchers access to data that may be otherwise inaccessible and expensive or challenging to collect, such as interviews and reflective journals in our research. The combining of whole or parts of datasets and reanalysis from a different perspective may elicit findings otherwise unobtainable and unforeseen. In the case of our research, working together on repurposing our data is also mutually advantageous for the generation of research outputs and is an opportunity for international research collaboration, both outcomes highly valued by universities. This approach has the capacity to result in knowledge enhancement, transfer and generalisability that was beyond the original intention of the research.

While there are benefits, there are also some issues to consider including; how much work is required to prepare the raw data for its new analytical potential and the value of the data beyond its original intended use (Bonde et al., 2019; Palmer et al., 2011); knowing how the data may have been processed (de-identification, type of transcription etc); influence of context on why the data was generated and possibly influences of other factors such as time or place. An important consideration is to examine alignment of the dataset with the methods and tools for new applications (Palmer et al., 2011).

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Some additional concerns to contemplate, include:

- ensuring acknowledgement of where the data came from;
- ensuring that the original purpose of the data is clear and transparent;
- whether any ethical or other constraints should be placed on how the existing data can be used;
- the question of whether the data is constrained by a particular qualitative methodology or set of assumptions that might affect how it can be reasonably reused.

When repurposing data we need to carefully consider the epistemological perspectives under which it was collected and consequently whether we can introduce cross-contextual generalisations. The application of any dataset is determined by the research problems being examined by the user community (Palmer et al., 2011). Clearly there are a number of important issues to consider when repurposing data sets. We have identified some important ones, but there may be others.

<div align="center">MULTI-METHOD RESEARCH</div>

Since our research not only considers repurposed data, but also the use of different types of data, some consideration of methodological issues in relation to mixing data types is needed. The terms multi-method and mixed methods are often used interchangeably, however there are differences between these research designs. Mixed methods involve the combined use of quantitative and qualitative data collection approaches within a single research project (Creswell & Plano-Clark, 2018; Morse, 2015). There appears to be little consensus on what exactly multi-method studies involve and it is currently being used to refer to a wide range of approaches. At present the term has been used to refer to studies with:

- multiple data sources from a singular paradigm, whether it be two or more qualitative studies (Qual-Qual) or two or more quantitative studies (Quan-Quan); or
- multiple data sources from multiple paradigms (e.g., Quan-Qual).

Usually these are two or more separate data sets, consisting of different participants and different methods of data collection (Hesse-Biber et al., 2015). In some definitions of multi-methods research there is a clear intention of using multi-methods in the original research design, so one of the data sets is designated as a core (sometimes referred to as 'complete' or 'main') component (which is carried out first) and the other a secondary ('supplemental') component (which builds on the findings of the first) (Morse & Cheek, 2014; Hesse-Biber et al., 2015).

In this paper we are using the term multi-methods to refer to the use of two different types of qualitative approaches in the same study, not mixed methods in the sense of combining qualitative and qualitative data. Our is thus a Qual-Qual design. A Qual-Qual multi-method design can be used "to obtain different perspectives or to obtain a more detailed and comprehensive perspective of a particular phenomenon" (Hesse-Biber et al., 2015, n.p.; see also Morse, 2010). In our research approach we weight each data set equally i.e. there is no primary and secondary data source. This means that each study could be published as standalone research, as opposed to only the core study being publishable without the other (Morse & Cheek, 2014). Alternatively, we could also consider the option of combining the two datasets and analysing this combination as a single entity.

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There are a range of possible benefits, issues and caveats with using multi-method approach using our WIL research as an example (Table 1). Many of these also apply to repurposing data.

TABLE 1: Benefits, issues and considerations for using multi methods approach

Benefits	Issues	Considerations
• Cost and time effective - can draw on data from multiple sources • Potentially provides a richer source of data than each data source alone, i.e. diverse perspectives, data source complement the other	• Direct comparison of findings may not be possible, however may be able to explore contrasts in the findings • Important to acknowledge the limitations of each data set individually and combined (e.g. different disciplines/fields) • The assumptions underpinning each approach may differ	• The different purposes for which each data set was collected • The different methods of data collection (interviews, reflective diaries) • Different levels of prompting about the topic • Supervisors are reflecting on student emotions, whereas students talking about their own emotions • Whether to analyse separately or combine

IMPLICATIONS FOR OUR RESEARCH

In terms of our own WIL research there are several questions that need to be contemplated.

Firstly, is the data fit for the new purpose we intend to use it for?

- Are the participants in both studies suitable for the new research?
- Is anyone missing from the data?
- Does the data fully capture what is needed for the new study?
- What might be missed out?
- Will analysing both data sets provide new insights?

Secondly, what are limitations of the multi-method approach of analysing and comparing data from student reflections and staff interviews?

- How will data collection methods influence our interpretation of the data?
- How will data collection mediums influence our interpretation of the data?
- How can we overcome this?

We are in the fortunate position of having the originators of both datasets as part of the research team. This provides valuable insights in the conditions of the data collection which will aid us in understanding and guiding our interpretation. It will also help guard against unreasonable assumptions. We also intend to undertake an extensive literature review to provide information of emotions and triggers in WIL to act as a means of triangulating the data. This will be particularly useful in uncovering any emotions that are not reported in either study. Our final conundrum is the question of whether to combine data sets for a single analysis, or whether to analyse them separately and compare results.

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CONCLUSION

Re-using and repurposing existing datasets is a worthwhile consideration as it has the potential to unlock new possibilities in WIL research and augment the strength of our research. However, measures are needed to ensure consistency and robustness of data, including: clear understanding of the conditions under which the data was collected, and the associated limitations for interpretation; ensuring data is 'fit for purpose' in a new context; and triangulating with multiple sources.

This paper is intended as an exploration of a novel methodology. We offer this discussion as a stimulus to encourage other researchers to think about new ways of tackling complex topics. We do not pretend to have all the answers but would like to open the space to consider some possibilities.

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