

Junchao_Essay Assignment

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A Critical Assessment of Using Qualitative and Quantitative Methods in Applied Linguistics

Introduction

As two fundamental research methods in applied linguistics, qualitative and quantitative have been compared and discussed for many years (McKinley and Rose, 2019). The most general and straightforward difference between the two methods is by no means the form of data (Dörnyei, 2007). Quantitative methods concern the 'numeric' data while in a qualitative study, the data are not in the form of numbers (Punch, 1998, p.4)

However, such distinctions simplify the complexity of the two methods and fail to identify the underlying reasons for using certain research methods. Therefore, a more comprehensive understanding is required. Researchers should know the rationale of collecting numeric and non-numeric data so that they can make the right decision when approaching their own research questions. At the same time, with the increasing use of mixed methods, the binary position of qualitative and quantitative methods has been significantly challenged (Angouri, 2019). It is argued by many researchers that compared with the mono-design, the mixed method approach is more 'versatile' and can often expand researchers' understanding of complicated issues (ibid). Nevertheless, it is impossible for researchers to conduct mixed methods without comprehensive knowledge of both qualitative and quantitative methods. Under such circumstances, this essay will critically analyse the two methods, aiming to identify the nuances and justify the choices of research methods in my future doctoral thesis. It will first discuss the 'transparency' issues in qualitative and quantitative research as it is vital for all empirical studies to have a good level of 'methodological openness and clarity' (Marsden, 2019, p.15). After that, by relating to examples from previous studies and my own proposed doctoral project, the main features of the two research methods will be compared and analysed. Considering the limited space, the essay can only focus on some key concepts in data collection and analysis process like snowball sampling in quantitative research and semi-structured interviews in qualitative research. The comprehensive.

detailed step-by-step procedure is beyond the scope of this essay.

Transparency in Qualitative and Quantitative Research

While qualitative and quantitative research differ in many aspects, they are all empirical studies, in which researchers acquire new findings and knowledge from their 'own data-based investigation' (Dörnyei, 2007, p.16). Unlike the library-based 'conceptual' research in which the information is often secondary and has been available to the public for many years, the data in empirical studies are collected by researchers themselves and will be blind to others until the researchers actively disclose them. Therefore, it is the researcher's obligation to ensure complete transparency in the research process, enabling reviewers and readers to know precisely how 'they moved from their research aims to data to findings to interpretation' (Marsden, 2019, p.15). In quantitative studies, non-transparency often occurs when researchers only report the significant results (i.e., *p-value* less than .05) but overlook the non-significant data. Nevertheless, in statistics, non-significant data merely indicates that there is not adequate evidence in support of the alternative hypothesis. The non-significant cannot entirely prove the truth of the null hypothesis (Visentin, Cleary and Hunt, 2020). Therefore, what researchers should do is to consider all possible factors that might influence the results (e.g., the sample size) and report them in the research (Visentin, Cleary and Hunt, 2020). Simply omitting the non-significant data is not responsible. What is worse, in order to get the work published, some researchers would even add or remove the data to intentionally 'create' significant results. Such misconduct is often known as 'p-hacking' and must be avoided as it is a matter of research integrity (Wasserstein and Lazar, 2016).

In qualitative studies, researchers obviously will not be 'kidnapped' by the *p-value* but for the sake of participants' anonymity, the issue of transparency has received scant attention (Batt and Kahn, 2021). There is no denying that ethical issues should be prioritized above the concept of transparency (Moravcsik, 2019) but that does not mean researchers can ignore the importance of transparency. A friend can be sincere and trustworthy without sharing too much of his/her privacy. Likewise, being transparent



in qualitative research does not mean illustrating all the information about the participants. Instead, researchers should differentiate the sensitive data from the general data. For instance, interviewees might mention names of their colleagues, family members and institutions during the interviews, which are sensitive and should not be shown to the public. The researcher then ought to substitute them with vague descriptions (e.g., ‘colleague A’ or ‘the institution’) rather than simply delete them in the verbatim transcript (Moravcsik, 2016). [Background reading](#)

All in all, the principle of being transparent is to make the original materials and data available to all readers. One possible solution is to use public repositories like the ‘Instruments for Research in Second Languages’ (IRIS: <https://www.iris-database.org/>) database. Initiated by Professor Emma Marsden from the University of York, IRIS is a free database where researchers can not only download research instruments, materials and data from other studies but can upload the original data of their own research. Unlike other open platforms, IRIS focuses specifically on applied linguistics and has been supported by the British Association of Applied Linguistics (Marsden, Mackey and Plonsky, 2016).

Quantitative Methods: ‘Meaning in the General’

In applied linguistics, there is a well-established history of emphasizing quantitative research (Loewen and Godfroid, 2019). The reasons for such an emphasis may vary but undoubtedly, it is the ability to ‘generalize’ the results from a certain study that makes a large number of researchers choose quantitative instead of qualitative methods. Indeed, one of the foci of quantitative research is to identify the ‘common features’ among the people (Dörnyei, 2007, p.33). By employing mathematical tools, the ‘common features’ or more specifically, the relationship between different variables among the groups of people can be pinpointed. Hammersley and Atkinson (1995) even regarded such explorations as one of the salient features of quantitative research.

In order to achieve generalizable results, the appropriate sampling strategies must be employed to make sure the collected data (i.e., sample) is representative (Rose,

McKinley and Baffoe-Djan, 2019). Generally speaking, there are two different types of sampling: probability sampling and non-probability sampling. The former is characterized by the process of 'random selection' of the population (e.g., random sampling, stratified sampling etc.) while the latter often intentionally selects the participants based on the research objectives (Dörnyei, 2007; Rose, McKinley and Baffoe-Djan, 2019). Clearly, probability sampling is a better method in terms of providing generalizable results as the selection is entirely based on 'probability and chance', reducing the impact of any 'subjective factors' (Dörnyei, 2007, p.97). Nevertheless, the shortcomings of probability sampling are obvious. It is usually impossible for researchers to have access to the whole population and the process of random sampling can be arduous as well as costly (Levy and Lemeshow, 1999). Under such circumstances, non-probability methods like convenience and snowball sampling are more widely used in applied linguistics (Rose, McKinley and Baffoe-Djan, 2019). In my own research project 'Understanding EFL Teachers' Emotion Regulation Strategies in Chinese Secondary Schools', the snowball sampling will be employed in the questionnaire survey to explore the EFL teachers' choice of emotion regulation strategies. As a 'purposive sampling', snowball sampling allows researchers to select the participants who meet the criteria in a 'chain reaction' (Dörnyei, 2007, p.98). With such a sampling strategy, I could distribute the questionnaire to a few EFL teachers in Chinese secondary schools and ask them to send the questionnaire to their colleagues. A large sample is expected to be collected, which is fundamental to quantitative research. As indicated by Hatch and Lazaraton (1991), in order to achieve the 'normal distribution', the sample should include at least thirty participants. However, the number 30 indicates an extremely ideal situation where participants are all randomly selected. For non-probability methods like snowball sampling, 30 is obviously not enough as the participants are intentionally chosen. Therefore, a larger sample size is required to minimize the variability and subjectivity among individuals. Moreover, as I intend to use Confirmatory Factor Analysis (CFA) to confirm the structure of Chinese EFL teachers' emotion regulation strategies, the minimum sample size in factor analysis is often 100 instead of 30 (Kline, 1994). Under such circumstances, the expected sample

size of my project would be around 200 to 300 and snowball sampling serves as the most appropriate strategy as it allows me to collect the large sample in a cost-saving but also reliable way.

With the collected sample, researchers then need to apply certain statistics techniques to analyse the data. The most fundamental one is the descriptive analysis because it allows researchers to 'describe and summarize quantitative data' in a meaningful way (Baffoe-Djan and Smith, 2019, p.398). Furthermore, if researchers intend to conduct the inferential analysis in which the relationship between variables is explored, they have to check the 'normal distribution' of the sample in descriptive analysis (ibid). Therefore, in my research, I will first conduct the descriptive analysis and display all the relevant results like the frequencies, mean and standard deviation through various visual aids (e.g., tables and charts). As for the normality of the sample, it will be checked via the normality plots test offered by the software SPSS rather than the sophisticated Kolmogorov-Smirnov test. According to Tabachnick and Fidel (2001, p.74), the Kolmogorov-Smirnov test might be too sensitive to the large sample. For a sample number of more than 100, researchers can simply check whether the visual distribution of the data fits the 'bell-shaped' curve (i.e., the main feature of normal distribution).

Overall, since the main purpose of quantitative research is to identify the 'meaning in general' (Dörnyei, 2007, p.27), researchers have to ensure such generalizability from the initial data collection to data analysis. Checking the representativeness of the sample and the rigorousness of the analysis will always be the central issues of quantitative research.

Qualitative Research: 'Meaning in the Particular'

Unlike quantitative research, the focus of qualitative is depth not width. By employing systematic methods, qualitative research aims to investigate individuals' experiences in detail and natural settings (Hennink, Hutter and Bailey, 2020). The numerical data used in quantitative research obviously cannot fully explain the

complexity of human experience. Teachers can mark students' essay assignments with a certain number (e.g., 70 out of 100) and calculate the mean of the whole class to have an overview of students' performance. Alternatively, teachers can also provide a particular student with detailed textual feedback to explain how well he/she performs, which might be better for the student's future study. Likewise, in qualitative research non-numeric data like interview transcripts, diaries and videos can help researchers explore the 'conundrums of the immensely complicated social world that we inhabit' (Richards, 2003, p.8) and gain a deeper understanding of the world from a certain individual. Therefore, in my own research project I will employ semi-structured interviews as well as reflective journals to understand the multifarious socio-factors behind EFL teachers' choice emotion regulation strategies. As a convenient way of collecting participants' perceptions, the interview has been widely used in qualitative research. Rossman and Rallis (1998, p.124) even regarded the in-depth interview as the 'hallmark of qualitative research'. Meanwhile, compared with structured and unstructured interviews, the semi-structured interview offers somewhat flexibility but at the same time, it can prevent interviewees from digression. It is often guided by pre-prepared questions and can allow interviewees to elaborate their ideas in an open-ended format (Dörnyei, 2007, p.135). In my research project, the guided questions will be based on psychologist Gross's (2015) theory as well as previous findings in EFL teachers' emotion regulation strategies (e.g., Jiang et al., 2016).

It seems everything is fine at this stage when researchers have chosen the type of interviews and developed an interview outline. Nevertheless, the real issue or challenge has just emerged. Distinguished from the questionnaire survey where researchers are often hidden from the questionnaires and do not directly interact with the participants, researchers have to actively interact with their interviewees. Therefore, it is necessary for researchers to have good interview skills or more broadly speaking, interpersonal skills. As indicated by Richards (2003, pp.53-54), a successful interview requires good listening and responding skills. Instead of being an apathetic recorder, researchers should show their interest during the interview, offering 'supportive feedback' and

emotional responses. Interviewees rather than interviewers should be at the centre of interviews and thus, researchers have to allow participants to 'take their own shapes'. The sudden interruption or judgements may prevent participants from expressing their ideas.

Background reading

In addition to the interviews, reflective journals will also be used as the 'triangulation' of data collection to explore EFL teachers' long-term experience in regulating their emotions. As a common way in social science (Denzin, 2017), triangulation refers to the use of 'multiple' (two or more) methods and data resources to enhance the 'credibility' of the research (Rose, McKinley and Baffoe-Djan, 2019, p.243). In my research, the use of reflective journals can make up for the shortcomings of interviews and cross-validate the obtained information. As indicated by Rolland, Dewaele and Costa (2019, pp.285-287), some variables can be 'time-sensitive' (e.g., emotion regulation in my study) and thus, interviews often cannot 'capture life as it is lived in the moment'. By contrast, as a self-report method, journals enable researchers to repeatedly examine participants' 'ongoing experience', providing them with the 'opportunity to investigate social, psychological, and physiological processes, within everyday situations' (Bolger, Davis, and Rafaeli, 2003, p.580).

As for the data analysis in qualitative research, while there are not as many mathematic calculations as in quantitative analysis, it still requires systematic and scientific analysing methods so that the important messages can be extracted from the messy raw materials (Dörnyei, 2007). The most frequently used approach is grounded theory in which the raw material will undergo three different types of coding: 'open coding; axial coding; and selective coding'. (Richards, 2003, pp.276-277). During the coding process, researchers categorise and interpret the data in a 'progressive' and 'inductive' way (Charmaz, 2005, p.530) to eventually extract the abstract theory. It is clear that the step-by-step guideline in grounded theory is rather friendly to novices (Dörnyei, 2007) and the 'progressive feature' can ensure that the researcher will not miss the important data. Under such circumstances, as a new researcher who is conducting the study from scratch, the grounded theory may be the most appropriate

analytical approach for me to deal with EFL teachers' interview transcripts and journals.

Conclusion

To sum up, quantitative and qualitative research are not exclusive to each other. They both recognize the connections between a particular individual and a large population, offering researchers scientific ways to understand the world. The difference is that the two methods tackle such connections very differently. For quantitative research, it aims to minimize individuals' subjectivity and identify the common traits of the population. In contrast, qualitative research believes individuals' experience matters since the 'higher-level meaning' can be obtained by 'summing up individual cases' (Dörnyei, 2007, p.27). Under such circumstances, what researchers need to do is to reflect on their research aims first and then apply the research methods accordingly.

Research methods literature.

Word count: 2494

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Junchao_Essay Assignment

GRADEMARK REPORT

FINAL GRADE

70/100

GENERAL COMMENTS

This is an excellent assignment, which explores the topic effectively.

You provide an interesting rationale for each research method and relate to extensive relevant background reading and your awareness of the module content.

You have succeeded in identifying a key features of each type of research in relation to current practice. This response indicates a level of critical understanding congruent with this level.

The style is coherent and reflective. You have obviously gained a great deal from this module and you are aware of the limitations of each research approach. Good awareness of the research methodology , clear awareness of each approaches' shortcomings and this is communicated clearly.

You might like to consider:

1. Reading more around the subject.
2. Check your syntax and grammar carefully.
3. Try to elaborate on key research theory in further detail.



Comment 1

meaning?



Comment 2

Agreed - good point.



comprehensive.

comprehensive coverage of content and theory.



Comment 3

Meaning ? They are included in most empirical studies?



Background reading

Evidence of wide reading



application of theory.

Appropriate application of theory.



Background reading

Evidence of wide reading



Research methods literature.

Research methods literature should be included in your references.

