Reflecting on data collection in the L2 Classroom

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Abstract

Students undertaking masters or doctoral studies are often required to complete an extensive research project as part of the course. This paper attempts to offer some practical advice and suggestions to novice researchers with regards to the preparation for, and the gathering of both qualitative and quantitative data. Based on the author’s personal experience of data collection which occurred over one academic year and was part of a doctoral research project, the paper begins by briefly describing the research conducted, including the measures used, and proceeds to explain the importance of conducting a thorough pilot study. The paper concludes with simple, practical advice with regards to the different methods used to gather data in this project.

I. Introduction

Many SLA practitioners see masters and doctoral degrees as a means of enhancing their career prospects, and increasingly teachers are engaging in extended research projects as part of the requirements for these courses. Collecting data in the language classroom can be a daunting and sometimes frustrating experience, and there is often a lack of practical advice as to how to efficiently, and effectively gather data. Most published papers are written to strict word limits, and as a result often gloss over the data collection process, making it seem smooth, and not particularly challenging. This paper attempts to redress this by briefly describing a one-year longitudinal mixed-methods study conducted as part of a doctorate degree, and then offering some practical advice and suggestions for novice researchers with regards to how to gather data in the language classroom. The paper briefly explains

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the importance of thorough pilot studies, and then moves on to cover qualitative and quantitative data collection, attempting to help students setting out to conduct research projects.

II. Background to the research

Groups are central to most approaches to language learning and their benefits are well known (Long & Porter, 1985). Despite this, there is relatively little research focusing on group processes in the language classroom and the research described aimed to increase our understanding of group processes by focusing on emergent leaders in small groups of students. A large body of research has shown that when a group work together towards a common goal, one or more members of the group will emerge as leader and control the norms for the group (Forsyth, 2010). Research in general psychology has shown that personality correlates with leadership (Judge, Bono, Ilies, & Gerhardt, 2002), as does task-related proficiency (Forsyth, 2010), and the research conducted aimed to determine whether leaders do in fact emerge in small groups within the second language classroom, and the predictive power of personality and English proficiency.

A secondary area of interest in this study was to investigate how the groups worked together over the course of an academic year, and to ascertain how the leader may influence the behavior of other members of the group. Mixed methods studies are increasingly popular (Creswell, 2009), with quantitative and qualitative measures used in a complementary manner, and I felt that this approach would potentially allow me to investigate both the emergence of leaders and the influence that they have on individuals within the group. I will now briefly describe the types of data that were collected in the current study, before emphasizing the importance of extensive pilot studies.

III. Data for the Study

Mixed mixed-method, longitudinal studies often involve a large amount of data collection, and the table below shows the data collection schedule for the first semester. The timetable shown in Table 1 was constructed in order to facilitate smooth collection of the data. Bold font indicates qualitative measures, and numbers indicate repeated measures.

As can be seen from the table, there were 11 surveys given in semester 1, and two video observations along with two recorded speaking tests. Semester 2 was very similar in terms of data collection, but without the personality, proficiency, and vocabulary measures.
Quantitative Measures

In total there were six quantitative measures used in the current study. The Group Leadership Index (GLI) (Cronshaw & Lord, 1987) was the outcome variable, and was a sociometric measure designed to quantify perceived leadership. This was adapted and translated into Japanese. The GLI allows leadership to be measured on a Likert scale and not as a dichotomy. Each student must rate the other members of the group by responding to 10 items which are based on perceived leadership. The first predictive measure was the International Personality Item Pool (IPIP) (Goldberg, 1990), which is a 50-item five-factor measure with ten items designed to measure each of the Big Five factors, and which adopts a Likert scale (Donnellan, Oswald, Baird, & Lucas, 2006). This was available in Japanese. English proficiency was measured using a dictation exercise made for this study (See Oller (1971) for a discussion of dictation as a measure of proficiency), and also the Vocabulary Size Test (Available online at http://www.victoria.ac.nz/lals/staff/paul-nation/nation.aspx). The self-efficacy questionnaire was adapted from Pintrich & de Groot (1990), and collective-efficacy was measured using a questionnaire designed by the author. The self-efficacy related questionnaire contained eight items, while the collective-efficacy measure was seven items in length. Both of the measures adopted a six-point Likert scale. All questionnaires were given in the students’ first language, Japanese.

Qualitative Measures

Qualitative measures used were participant observation, classroom video observation, speaking test video observation, and interview. The researcher was also the teacher, and participant observation was used in order to obtain an ongoing description of the groups. This involved taking notes during and after each class that was taught. Aside from this, video observations were conducted over the course of

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Key. GLI = Group Leadership Index, CE = Collective-efficacy, SE = Self-efficacy.
the year, with each group recorded for a 90-minute class on four separate occasions. With 20 groups in the study this meant a total of 80 separate recordings. Two speaking tests were also recorded for each group in each semester, again resulting in 80 recordings. Following each semester two groups of four students were interviewed, with each interview lasting approximately 30 minutes, and again these interviews were recorded, with a total of 16 recordings.

IV. Data Collection

The next section of the paper provides advice on using the qualitative and quantitative measures described above. I shall begin however by briefly highlighting the importance of pilot studies, which are the first and most important step in order to ensure a smooth start to the data collection.

1. The importance of pilot studies

Although pilot studies are widely accepted as being an essential step in research, I cannot emphasize strongly enough the importance of thorough piloting of all measures. Many problems faced when conducting classroom-based research can be overcome by conducting a small-scale study before the main research project. Although the proposed research was a one-year study involving 80 students, the pilot study had approximately 100 students engaged in a five week group project similar to that done in the actual study. All the questionnaires were given to the population of approximately 100 students from the same context, and Rasch analysis was conducted to ensure that the questionnaires were psychometrically sound (see Bond & Fox, 2007 for a comprehensive introduction to the Rasch Model).

Interviews and observation can be somewhat harder to pilot, but again doing a short pilot study again has many benefits. A pilot study observation will give you many insights into the practical problems when trying to record students in the class. Issues such as camera angle, camera placement, and audio recording can all be checked without the pressure one feels during the main research project, where the data will be used for analysis. At this stage problems or special considerations regarding equipment such as cameras can also be identified. I was using a digital video camera which stopped recording after 29 minutes due to file size restrictions, which was identified through piloting. Pilot observation provides the researcher with an approximate idea of how long it will take to set up the cameras. For the research conducted, it took at least 15 minutes to prepare the room for recording.

As previously stated, a thorough pilot study should be undertaken before the main research project begins, but even after piloting there are issues to be aware of when conducting data in your main study.
2. Questionnaires

i) Gather data online.

Computers have increased in prevalence and now most universities or colleges have a reasonable provision for students. Sites such as Survey Monkey charge a monthly fee, (http://www.surveymonkey.net), and allow the user to send questionnaires directly to student computers, or mail the appropriate link so that students can complete the survey outside of the classroom if computers are not available. With the increasing proliferation of smart phones and other internet capable hand-held devices, online data collection is now a feasible alternative. Other advantages include the option to make all questions required so that there will be no incomplete data, and the safe storage of results online, which can also easily be downloaded for analysis in Microsoft Excel or the statistical package SPSS. In a study such as my own with almost forty thousand responses, the time saved by using online collection is incalculable. Even in situations where little or no money is available for research, Google Docs is able to perform similar functions and is a free alternative.

ii) Keep clear records of absenteeism.

With so many students completing so many measures, it is very easy to lose track of which students have completed which measures. By keeping very clear records of when individual surveys were administered and who was absent, it is easy to know who needs to complete which survey, and with access to student email addresses, it is easy to send the relevant questionnaire to the appropriate student. Without these clear records it is possible to determine who has not completed a given questionnaire, but involves the far more painstaking and time consuming process of searching through lists of names in excel files.

3. Observation

i) Be aware of the limits of participant observation.

One of the methods of observation for the main study was to collect data through participant observation (Spradley, 1980), allowing week by week notes which would chart the development of groups and give insights into leadership. Although the challenges of participation are well documented (Hatch, 2002), I did not anticipate how little time was available to observe the students. When teaching we are highly focused on the lesson and therefore it is difficult to sit back and objectively take notes. As a result the notes taken were brief, and not as insightful as I had hoped. Even after class I found that students would approach me with concerns or questions, and sometimes there would be no time for note taking before I had to teach the next class. It becomes very difficult two hours after a class to recall the details of what happened.
ii) After piloting, pilot.

Although initial piloting allows the researcher to determine optimum camera placement and become more comfortable with the recording equipment, it is still important to pilot observation during the main study. Different students will sit in different positions and have different voices, and this means that it is essential to pilot observation before the main observation. Another purpose of repeated piloting is to enable students to become familiar and comfortable with the recording equipment, reducing observer effects. When people are aware that they are being watched they modify their behavior, and this is described as “reactivity” (Cohen, Manion & Morrison, 2000, p.410) or “the observers’ paradox” (Richards, 2003, p.108). Wallace (1998, p.107) describes video recording as the most intrusive of all observation methods, and placing a video camera in a classroom can have a marked effect on the participants (Swann, 2001, p.327). It was very noticeable in the current study that students initially responded to the presence of a microphone and camera, gesturing and even playing with the recording devices in the initial observation. After several observations the students became accustomed to the presence of the camera and seemed to almost wholly ignore it, resulting in far more natural and authentic data (McDonough & McDonough, 1997, p.111).

iii) Label files and back up data.

In the current study there were 20 groups in each semester, and each of which were recorded for 90 minutes on two separate occasions. This meant there was over 200 gigabytes of data in over 100 different files. As is often the case, in a crowded classroom it was difficult to hear students through the camera microphone, and so a separate MP3 recorder was placed on each desk. Although very time consuming it is essential that each file is clearly labeled, particularly audio files which can be very hard to differentiate from one another. Aside from labeling, it is also essential that files are backed up regularly. Although most people are aware of the need to carefully back up files, it is difficult when one is in the middle of a busy term, with a full teaching load, to keep backing up data. I had the case in this study where an external USB drive containing all of the data from the one year study was corrupted, but had been fortunate enough to have the data in two other locations. With the relatively low cost of buying external memory drives, it is essential that data is backed up on a regular basis.

iv) Check equipment thoroughly.

Some data was lost in the main research project through a lack of care when checking the cameras and recording devices. Again it may be well known, but when you first turn on electrical appliances the battery monitor can show that the camera is fully charged, and yet within 10 minutes the battery level has dropped to almost zero. There were several occasions where I checked the equipment and the battery
level seemed sufficient, only to find at the end of the class that the camera had turned off after only 15 minutes of recording. Checking equipment including the available space on memory cards will ensure that no data is lost due to technical error.

4. Interviews

Analyze then interview, or interview then analyze.

Although the title may seem slightly confusing, it is essential that the researcher is aware of what kind of data they want from the interview, and makes an informed decision on whether to analyze other available data before or after conducting the interview. In this study, there were some interviews where I was able to fully analyze the observation and questionnaire data before conducting the interview, while in some interviews I was only able to conduct a perfunctory analysis of some of the questionnaire data. This had a big impact on the nature of the interview, with the second being far more exploratory. Both of these approaches to interview have value, but it is important that the approach adopted is by design, rather than a result of circumstance.

V. Conclusion

This paper has attempted to provide practical help for novice researchers attempting to conduct extensive research projects involving both qualitative and quantitative data. After briefly highlighting the importance of pilot studies, the paper concluded with some practical advice with regards to the various measures that were employed in this research, with the hope that it will prevent the kind of errors that occurred in my own research. In order to assist novice researchers we need more papers aimed at providing practical help and advice from more experienced members of the field.

References


