OBSERVE, RECORD, THEN BEYOND: FACILITATING PARTICIPANT REFLECTION VIA RESEARCH DIARIES

Kate Lewis*
Frank Sligo
Claire Massey

Abstract

Purpose – The purpose of this paper is to describe the application of the diary-interview method in the context of research on technological learning in the New Zealand dairy industry. Design/methodology/approach – The diary-interview method was used to collect data from 8 farmers operating small or medium sized farms. The data gathered supplemented that collected through other means and was an important component of the case studies. Findings – The diary-interview method was found to be highly appropriate for this project context because it allowed the researchers access to data that would not otherwise have been available (due to project constraints) and to a deeper degree of reflection from the interviewees. Research limitations/implications – The use of the diary interview method is time consuming and can result in complex data to be analysed. The method was only applied to 8 cases and while the experiences in each were positive there may be instances where its application would be inappropriate. Originality/value – The paper contributes to the literature on effective qualitative research and provides a detailed guide to the use of the method, as well as its limitations.

DOI: 10.1108/11766090510635451

*Kate Lewis is a Research Associate of the New Zealand Centre for Small & Medium Enterprise Research, and a member of the Department of Management & Enterprise Development, at Massey University, Wellington, New Zealand. Massey University, Private Box 756, Wellington, New Zealand. Associate Professor Frank Sligo is the Head of the Department of Communication & Journalism at Massey University, Wellington, New Zealand. Massey University, Private Box 756, Wellington, New Zealand. Associate Professor Claire Massey is the Director of the New Zealand Centre for Small & Medium Enterprise Research at Massey University, Wellington, New Zealand. Massey University, Private Box 756, Wellington, New Zealand.

1. INTRODUCTION

Diaries have long been a source of data for biographers and literary scholars. More recently the diary as a source of data has been adapted for use by psychologists, sociologists, health care researchers, market researchers and information scientists (Toms & Duff, 2002). What differs between the two groups of users is the approach taken with regard to the use of the diary as a method of collecting data. While the former (biographers) rely on the diary as a personal journal that is independently composed, the latter (psychologists etc.) have come to use diaries as a structured means of prompting individuals to record the details of everyday life events. The end result of this process is a research diary (Toms & Duff, 2002).

The diary as a tool for collecting data cannot therefore be seen as something new. However, interest in its usage in a research context has increased steadily throughout the twentieth century and specific categories of research diaries have emerged (Johnson & Bytheway, 2001). These include the unstructured daily diary, the log or time budget (Plummer, 2001) and the diary-interview (Zimmerman & Wieder, 1977). The different types reflect the fact that diaries can contain different information, take different forms and can be used for different purposes (Toms & Duff, 2002).

The type of data that diarists are asked to record can be as varied as the types of diaries themselves. For example, in the past diaries have been put to good use to capture data on travel, nutritional intake and radio listening or television viewing (Dillman, 2000). What these data have in common is that they are of the sort that would usually not be recalled accurately, other than immediately after the activity had taken place. For that reason diaries have been seen as a method of encouraging an immediacy of data recording that prevents inaccuracy and enables the collection of a complete picture. As such those types of diaries are typically very structured, cover a specific time period, and require the diarists to collect very detailed, micro data (Dillman, 2000).

What has increasingly come to be recognised is that diaries can be put to a use beyond the collection of micro data and can equally be applied to the collection of data about a process (i.e. the events leading up to and following a specific activity and/or decision). In this context (where diaries are used as a means of recording the various aspects of a process), multiple types of content can be collected and combined with the specific details typically expected of more traditional research diaries. As Toms and Duff note, “the diary can encapsulate a lengthy, mostly non-observable process” (2002, p. 1236) – i.e. diaries can go beyond counting and collecting to enable the diarist to describe and reflect.

This points to one of the most commonly cited reasons for using diaries – as a complement to other methods of data collection. One of the best known approaches to complementarity of data is triangulation. Patton (1990) described the importance of this, and the practice of using different data-collection techniques and research strategies in order to bring together disparate findings and impressions from the same situation or research setting. This was consistent with the perspective enunciated

by Denzin (1970) who commented on the desirability of “combining multiple observers, theories, methods and data sources” with the aim of overcoming “the intrinsic bias that comes from single-methods, single-observer, and single-theory studies” (p. 313).

A slightly different perspective is offered by Trend (1978), who observes that one of the important issues in using a triangulated approach is not so much to enable researchers to find and then demonstrate that their findings mutually reinforce one another and are well integrated, but rather that “we give different viewpoints the chance to arise, and postpone the immediate rejection of information or hypotheses that seem out of joint with the majority viewpoint” (p. 353).

This opportunity to juxtapose different perspectives is also noted by Patton (1990), who describes the importance of findings that are contradictory, or out of joint in some way, as this tends to represent a richer picture of what is normally a complex reality. He notes, “the fact that observational data produce different results than interview data does not mean that either or both kinds of data are invalid, although that may be the case” (p. 467).

The present research illustrates triangulation both of methods and sources. First, we compared the consistency of information derived at different times from research participants, attempting via this longitudinal means to assess change and maturation in the views of the participants across time. Second, participants’ own views as recorded in diaries were set alongside the interviewers’ perceptions of what the participants had said in order to obtain either confirmation of interview data or what could prove to be a different and new angle on the topic. But, there is also an element of analysts’ triangulation, insofar as the researchers were resident on different campuses of a single research institution, and each had the opportunity to consider the diary and interview data and respond in their own way to it. Patton’s (1990) final type of triangulation, that of theory, was also present in this situation – implied by the varying disciplinary training and experience of the researchers, and the resultant different perspectives they brought to data interpretation.

2. DIARIES AND THE PROJECT

For this project diaries were used to assist in gaining an understanding of the nature of technological learning (TL) in small and medium farms within the dairy industry – where TL was defined as the process whereby individuals gather information and turn it into knowledge that can be used by them in their organisations. The goal of the interdisciplinary team was to identify factors that impact on the ways in which farmers engage in TL and the rate at which this engagement occurs. The phase of the project that this paper relates to was built around three inter-related research objectives and used four methods during 2002/03 to gather data. These included an industry forum, interviews with industry members, a questionnaire and case studies with farmers (of which the diaries comprised a part).

The unit of analysis for the cases was the farmer (cf. the farm business) and the eight cases were purposefully selected from those who had volunteered to act as case subjects when responding to the questionnaire. The cases therefore represented a range of examples in terms of rate of farm growth (gauged by farmer self-description) and the role of the farmers in terms of decision-making (i.e. whether they were owner/managers or sharemilkers¹). It was also a stratified sample (following Patton, 1990), in order to identify subgroups that were of interest to the research team (i.e. large farms, small and medium sized farms).

The cases were designed to help the researchers obtain a detailed picture of the actions that are undertaken in the context of TL – including details like the specific time of the day when these actions were undertaken. The researchers were interested in seeing if there were any patterns in the way the individuals engaged in TL, or patterns that related to other activities they were undertaking in their daily routines or family routines.

As with most case studies, an interview acted as the central data collection component of the cases, but it was clear to the researchers that there would be a number of problems inherent in relying solely on an interview to elicit the sort of detailed data needed to answer the research questions. In order to address these questions, the researchers designed a field work protocol that had three components: an initial on-site interview, a period of data collection where the interviewee independently recorded data in a diary, and a follow-up on-site interview.

During the initial visit the researchers sought to establish rapport with the interviewee, collect baseline data on the characteristics and history of the farm and the farmer(s), and introduce the study (purpose, definitions, and researchers' expectations). The researcher also left with the participant a seven day daily journal that was designed to record what TL activity took place in the week immediately after the first interview. In order to assist the interviewee to use the diary, as part of the first interview the researcher asked the interviewee to identify a specific situation which would be appropriate for use in this part of the diary. This approach ensured the chosen situation was appropriate and helped gain greater participation from the interviewee. Ideally it was a situation that had recently occurred (and could therefore be readily recalled), and where the process of learning had been substantially completed.

The diary had two parts and was put together as an A4 booklet – using the instructions depicted in Figure 1.

The first section comprised of two pages that aimed to capture information on a single practical situation, where the interviewee was able to describe the process of TL in action (rather than use a theoretical scenario). It incorporated space for the respondent to describe:

1. The situation that led them to identifying a need to engage in TL.
2. Whom they consulted, about what and whether it helped or hindered them in terms of progress on the issue.

Figure 1: Diary instructions

<i>BUILDING COMPETENCE IN TECHNOLOGICAL LEARNING</i> <i>Journal Guide</i>
--

The focus of this project is on improving performance in the dairy sector, by investigating how farmers learn about technology and innovation. The project is being undertaken by a team of researchers from Massey University, led by Dr Claire Massey from the Wellington campus.

The team has been researching this topic for some time, and this project builds upon on its recent work in the dairy industry where the team has focused on developing better extension methods and identifying factors that affect the use of sustainable management practices.

In this phase of the research the team is seeking to gain an understanding of how to successfully engage farmers in learning about technology and applying it to their farms. The researchers wish to identify

- the ways in which the inter-relationships between institutions, industry bodies and individuals contribute to learning about technology in the on-farm sector of the dairy industry
- the skills and knowledge necessary for individuals learning about technology and
- the way in which dairy farmers think about new technologies.

<i>The Situation</i>

On the blue pages we would like you to describe a situation where you were engaged in 'technological learning', i.e. where you were able to turn information gained from research or other sources into knowledge that could be used by you on the farm. The situation will be specific to your farm and we want to know how you dealt with it, using the boxes provided.

In the 'what' section describe the situation in as much detail as you can. In the 'who' section describe who you consulted and how or why they were useful. In the how section describe what actions you considered and what actions you took. Finally, in the 'skills' section describe the skills or knowledge that was useful or essential. It would also be helpful if you indicated the timing related to the situation (i.e. how long it took you to make a decision or find someone appropriate to talk to etc.). In order to give us as complete a picture as possible it would be helpful if you revisited this section of the journal each day you looked at the other daily section and added any other details you recall.

<i>The Daily Journal</i>

While the first section of the journal deals with a past experience, we would also like you to record any 'technological learning' that takes place in the 7 days following the researcher's initial visit. This may relate to the same situation you have already described, or it may concern a completely different issue. This part of the journal uses the same headings (what, who, how and skills). We would like you to keep this part of the journal for 7 days, and post it back to the researcher at the end of this time.

3. What actions they either took or had considered taking and over what time period.
4. What knowledge they needed to address the situation and the specific skills that were useful.

In order to complement the data recorded on this situation (which was retrospective), the seven day journal component of the diary aimed to collect data relating to the present, by collecting data on the day-to-day TL activity or behaviours of the respondents. For continuity it utilised the same headings as the situational section: what, who, how and skills.

The second, or follow-up, interview occurred on site within a month of the first interview. This followed the “diary-interview” method first described by Zimmerman and Wieder in 1977, which combines a type of diary with an intensive interview. In particular, Zimmerman and Wieder outlined the use of a structured diary (devised to record daily interactions) followed by an interview, where each aspect of the diary was discussed for elucidation and amplification.

This was designed to probe the data obtained via the diaries and the researchers were prepared to deal with non or partial completion of the diary. However, all interviewees who participated had completed the diaries to a greater or lesser extent so non-completion proved not to be an issue, and the second interview offered the researchers a way of allowing the interviewees to amplify their diary responses.

The second interview also provided a mechanism for focusing on some of the complex inter-personal issues that are often overlooked in interviews merely because of the difficulty in dealing with them. For example, the researchers were cognisant of the multiple *roles* played by interviewees that became apparent during the discussions that took place in the second interviews when the interviewees were reporting on their experience of recording their TL in the diary. In particular, these were observer (both of self and other family or business members), interpreter (of their own observations) and informant for the researchers (Zimmerman & Wieder, 1977). As these roles suggest, on one level the interviewees were playing the role of supporting the researchers, in serving as informant. Yet perhaps more importantly, they were going beyond data gathering and were taking the opportunity to stand back from their business practice and engage in a kind of structured reflection that they were otherwise unlikely to have pursued without the prompting of the diary and the second interview.

3. ADVANTAGES OF USING DIARIES

A major advantage of using diaries in the research project described here was the volume and type of data collection it facilitated. In particular, it allowed the research team to explore issues of a conceptual nature with the respondents and provided a temporal, real life dimension that would not otherwise have been possible. An alternative approach that would have been suitable for the research objectives could have drawn upon ethnographic approaches, but even if some

close ethnographic-style observation (that was in any event beyond the scope of the project) had been possible, the contribution of the diary-keeping to the research was of a different kind: It encouraged the participant rather than the researcher to take a reflective overview of what had been happening over the previous week, relevant to the topic.

As Zimmerman & Wieder (1977) asserted, the second interview needs to both expand on what was reported in the diary, and provide an opportunity for the researcher to question features of the events recorded that were not directly observable (e.g., their meaning and significance for the respondents). Therefore, for this project the diary-interview process afforded the possibility of gaining some degree of access to a naturally occurring sequence of activity, as well as the opportunity to question the meaning and significance of the process itself (Zimmerman & Wieder, 1977) – something that would not have been achievable without the utilisation of a research diary.

In particular, it is clear that by using the diary-interview method in this study it was possible to make it possible for some key findings to emerge. For example, by using the diaries (and the second interview) it was possible to see that in these cases, TL is not an intermittent event – some aspect of it occurred almost daily for all of the participants. We were also able to see that almost all the participants had a regular routine for some aspect of TL such as information gathering (e.g. “I log on to the net when I come in to make my lunch”). Similarly, we could see how routines could be disrupted (e.g. “I didn’t do anything at all for three days in a row – the cricket was on TV”), and how enacting the routine was dependent on other priorities (e.g. “if it is raining outside, and I have nothing else to do, *then* I will pick up *The Exporter*” (an industry magazine)). Finally, the use of the diaries made it clear that family members (usually the wives, but sometimes a father or a son) can play a key role in the TL process (or sub-processes) (e.g. “my wife puts everything she thinks I should read on my desk, after binning the obvious junk”).²

These quotes provide some hint of the characteristics of the interviewees: They were well-educated, sophisticated in their understanding of the way in which research could contribute to better farming practice, accepted the publication goals inherent in the study, and understood what was needed to make a contribution to the research. For this reason they saw themselves more as collaborators in the research, rather than merely as sources of data, which probably encouraged them to take a more in-depth assessment of the issues surrounding TL.

This was one of the key advantages of the diaries, as they permitted the cross-sectional nature of interviews to be negated to some degree, adding depth and perspective to the researchers’ data. An important contribution was the provision of data that could not have been gathered in any other way, because they were not observable. Rather they were based on judgement and opinion, a perspective that was crucial for this project.

As well as differences in the type of data collected, the volume of data also increased by virtue of the level of detail obtained via the diary completion process. This is congruent with investigations of the use of diaries compared to other methods that have found the “paper and pencil diary obtaining greater detail than the other methods” (Dillman, 2000, p. 267). The complementarity of the diary as a data collection tool with other methods was also advantageous. In this project it added new insights to those that had been derived from an industry forum, from a questionnaire, as well as from the interviews themselves.

What is also advantageous about diaries when collecting data to do with a process, or sequence of activity, as was the case with this project, is the short time between event occurrence and record of the event (Toms & Duff, 2002). The use of a diary ensures that there is less opportunity for memory lapses, “retrospective massaging” or the potential for relating an event in a different context (Verbugge, 1980, cited in Toms & Duff, 2002). Yet even “retrospective massaging” is of interest to researchers (so long as that massaging is recognised as such or is at least intimated in some way) given that a participant’s ambiguous or bi-valent versions of some event are more likely to signal a rich, thick account rather than a fully unified (and possibly sanitised) account.

The use of the diaries also helped the research team deal with issues of reliability: “... [they are] more reliable since they are completed immediately following an interaction when the event is still fresh in the individual’s mind” (Conrath, Higgins & McClean, 1983, p. 315). It also helps ensure that under circumstances where a concept might be new to a participant (e.g. technological learning) it assists them to maintain a link between what they had explained to them in the interview, their own experiences, and improves their ability to link the two in a meaningful way.

One of the pragmatic advantages of the application of diaries as a data collection tool in this project was the ability to reduce the impact of time, cost and geography. The very nature of fieldwork is expensive, and multiple site visits and interviews are not always possible. In this instance the diary facilitated the collection of participants’ records of interactions plus their perceptions of their experiences over a one week period that would not otherwise have been possible. The nature of the diary, which is simultaneously a dialogue with oneself and with the researchers whom the individual knows are going to be reading his or her words, permitted respondents to reflect in self-aware ways that they might not have otherwise experienced, on intrapersonal, interpersonal and business-related issues relevant to the subject. It also acted as a third source of data and thus created a possibility of triangulation against interviews, so increasing the amount of data collected without further costs or time commitment. This was even more desirable in this project given the geographically diverse locations of the subject farms and the nature of accessing rural locations.

The format of the diary itself also proved to be advantageous, but by luck rather than design. The A4 sheets of paper the diary comprised proved to suit the farmers

involved in the project better than would be the case with a binder or other more bulky and less transportable approach. Some of the farmers had folded the A4 sheet into a smaller rectangle and inserted it into the top pocket of their overalls (along with other recording notebooks) to assist them with completing it as accurately as possible. This illustrated two unforeseen benefits of using diaries in this project: firstly, that farmers are adept and familiar with record-keeping by virtue of their work context, and secondly that they are often more willing to use paper and pen methods than other more complex methods (e.g. online data collection systems). This characteristic of the group being researched ensured that what Wheeler & Reis (1991) described as “monitoring of daily life at a level to which subjects may be unaccustomed”, was not the problem the researchers feared it might be. Rather it was an opportunity for the respondents to express their point of view at the time capturing ideas and events as they occurred. It also prevented the researchers having to exercise persuasion in terms of conveying the importance of the recording system. Indeed, as Sparrow (1999, p. 127, cited in Toms & Duff, 2002) also found, it fitted with the participants’ expectations “of the sort of thing that university researchers might do”.

4. LIMITATIONS OF DIARIES

There are a number of disadvantages put forward in the literature with regard to the utilisation of diaries as a data collection tool. Some, but not many, of these were faced during the course of the project described in this paper. The primary disadvantage overcome was the potential unwillingness of participants to comply with the requirements of the diary regime. However, as discussed earlier in the paper, this proved not to be an issue. A number of other potential disadvantages were also avoided due to the scale and nature of the project itself. As there were only eight diaries to analyse the volume of data was not as overwhelming as it might have been had diaries been used as a tool in a larger scale project. Nor was the issue of sample attrition relevant as it sometimes is where diaries are used in larger projects (Toms & Duff, 2002).

A number of conventions were followed in the design of the diary so as to address many of the disadvantages outlined in the literature regarding the quality of data obtainable. For example, Toms and Duff describe how “explicit categories would make the diary more efficient for entry and simpler for the participant” (2002, p. 1237). Also the broader the focus of the diary the less likely it is that the participant will record relevant events (Johnson & Bytheway, 2001), so the constrained focus of technological learning that was the theme of this diary was appropriately specific.

Conversely a number of disadvantages put forward were proved not to be as applicable in the context of this research project. For example, Conrath (1973,

cited in Conrath, Higgins & McClean, 1983) noted that if a self-recording diary required more than 5-10 minutes per day to complete, data validity would be reduced. We were interested to note that this did not appear to be an issue in this project, even though in some instances our participants had taken substantially more than this time to complete their diaries. One farming family had even taken the trouble to keep separate “his and hers” diaries, then had typed them up for us so we could compare these two individuals’ accounts. This kind of going the extra mile we put down to participants’ interest in the project. However, the choice of Zimmerman and Wieder’s (1977) diary-interview method was deliberate in order to increase data validity and decrease diary disadvantages.

Other potential disadvantages (including those identified by Johnson and Bytheway (2001, p. 188-189) were addressed during the research design phase of the project. Four of these disadvantages are outlined below, along with the way in which the researchers overcame the potential disadvantages:

1. “Representativeness – to what extent does such a demanding research tool put potential participants off, creating a sample more biased than would otherwise have been the case?”

As the participants for this project were purposively selected (i.e. were not a random sample) this was not an issue as we recognised that the participants represented those who were sufficiently interested and self-aware to want to participate in this kind of study.

2. “Difficulties – are some participants unable to complete the diary due to visual impairment, problems of manual dexterity or limited literacy skills?”

This was able to be assessed during the first interview, and accommodations made for any difficulties that were presented.

3. “Quality of data – how consistent, adequate and accurate is the diary as a record of daily events and actions?”

Validity in terms of qualitative research is often a subjective measure best judged by the researchers concerned and their referees. However, best efforts were made during the research design phase to ensure integrity. Hence the adoption of Zimmerman and Wieder’s (1977) diary-interview approach in order to ensure the highest possible data validity – including the ability to confirm and explore data during the second interview.

4. “Ethical considerations – does the completion of a diary, and all that goes with it, cause undue distress, anxiety or inconvenience?”

Again, this could be addressed when the diary was introduced during the first interview. At no point was it communicated that the diary completion was a compulsory

part of the interview and without exception participants appeared to relish the opportunity to engage in this kind of self-reflexive behaviour. In addition researchers were following the guidelines of their own university ethics committee.

5. CONCLUSIONS

Whilst interviews are a rich ground for data collection they are at times mediated by the characteristics of the individual interviewers themselves, including the interviewer's ability to maintain the focus and direction of the interview. By contrast, as Toms and Duff (2002) say, the diary is "a research instrument that is written for the researcher and with the researcher's needs in mind" (p. 1233). Yet the diary is also written to meet the needs of the research participant, one of which we found to be to provide them with some reflective space. This complementarity of the research diary with data from interviews was an advantage in this project given the multi-disciplinary composition of the research team, coupled with the researchers being spread across different campuses of a single university. Equivalence of data type and volume relating to some constructs was promoted by virtue of the application of the diary as a data collection process. However, the characteristics of the participant filling it out also meant that diary entries reflected their idiosyncrasies in ways that yielded useful insights into how they saw their learning activities. However, the risk of highly discrepant data was mediated by a comprehensively written team research protocol which shaped the briefing and instructions that accompanied the diary.

At their best, the diaries in this research enabled participants to interpret their professional and personal lives through what we came to think of as multiple voices. In the first instance participants mused on their own behaviour (along the lines of what Tedlock (2000, p. 465) has called "from participant observation to the observation of participation"). Part of this involved building a clearer picture of themselves as interpreters and reporters of research, consciously setting out to provide the research team with insights into participant learning. By this means the researchers were enabled to some extent to enter the participants' subjective realm of experience.

Yet as researchers we too were not unaffected. As we noted the participants' reflections as, under our questioning, they described the personal meaning that they derived from their own diary entries, we as interviewers became more conscious of our own role as academic researchers probing the participants' world of praxis, and the interplay between us. At points we became conscious that the farmers were interpreting on two levels, one for themselves as part of deriving new meaning about their own professional lives and roles, and again for us, as they took pains to express their thoughts in ways that they considered would be accessible to us (essentially) as outsiders.

In the researchers' view, it was not the diary alone, but rather the combination of the diary and its author's reflection upon it (as prompted by the interviewing researcher) that tended to trigger fuller self-awareness for the participants, beyond what could have been achieved by interviews alone. Although the diaries in the first instance called for a description of activities associated with the people on and off-farm with whom respondents had interacted, it was the recounting and recording of those names and events that permitted either the research participant or the researcher to go beyond a discussion of activities and into an assessment of roles, contribution and status.

This fuller perception of participants' multiple roles helpfully refocused the research from what might have been an atomistic account of events (what) and into a broader consideration of how the participants engaged in complex and multi-dimensional ways with their environments (who and why). While the what or events that transpired provided an accurate and necessary log of occurrences and stages in the learning process, it was the who and why, we thought, that added rich, descriptive dimensions to how participants came to see themselves through the research.

For example, multiple roles were revealed by Farmer B during the interview that drew out the significance of events he had recorded in his diary. These included himself as a person who gives back to the community through service to it in various ways; as an expert in a dairy industry body; as an employer and coach of a staff member on his farm; as a source of advice and role-model for younger farmers; as a consultant to others who receives some (even nominal) payment for specialist contributions; as a church-goer; as a peace-maker or negotiator in the instance of an interpersonal dispute on-farm. All these roles can be seen as existing within overlays and kinds of community. Some of these manifestations of community are near at hand, others represent community without much propinquity, but each of which is somewhat different from the others. Therefore the learning implicit within each layer of community is likely to differ.

In conclusion, the use of diaries as a data collection tool in this project proved to be an advantageous use of what has sometimes been described as an alternative approach. The innovation of introducing diaries into the case study process resulted in the collection of data that would not have been otherwise possible. The focus of the current study had been technological learning, but in unanticipated ways the diary (and its identification of areas to probe with participants) complemented technological learning by redirecting respondents into a consideration of their roles, contribution to and place within their own communities. This occurred by redirecting both participants and researchers into a more self-conscious awareness of personal learning practice and process. Harri-Augstein and Thomas (1991) have dubbed this interaction between researcher and participant learning conversations or self-organised learning, following their observation that we know very little about the means by which personal ventures in learning are undertaken, nor why and how some individuals are more competent than others (p. 7).

Use of diaries also proved to be a method that found approval with the participants in a unique research context, in that it permitted them to reflect in ways that they might not have otherwise explored, on intrapersonal, interpersonal and business-related issues relevant to the subject. In this instance the advantages of the diary usage outweighed the disadvantages, and careful research and diary design minimised any negative impact of the utilisation of such an approach. This points to the relevance of considering the inclusion of research diaries as a data collection tool within projects that by purpose and design are appropriate.

Endnotes

¹ A sharemilker is an individual who has a formal relationship with a land owner, whereby the sharemilker owns the herd and pays a percentage of the farm income to the land owner.

² Findings of the project have been reported extensively elsewhere (e.g. Massey, Morriss, Alpass, & Flett, 2002)

References

- Conrath, D.W., Higgins, C.A., & McClean, R.J. (1983). A comparison of the reliability of questionnaire versus diary data. *Social Networks*, 5, 315-322.
- Denzin, N.K. (1970). *The Research Act in Sociology*. Butterworths, London.
- Dillman, D.A. (2000). *Mail and Internet Surveys: The Tailored Design Method* (2nd ed.), John Wiley & Sons, New York.
- Harri-Augstein, S., & Thomas, L.F. (1991). *Learning Conversations: The Self-Organised Learning Way to Personal and Organisational Growth*. Routledge, London.
- Johnson, J., & Bytheway, B. (2001). An evaluation of the use of diaries in a study of medication in later life. *International Journal of Social Research Methodology*, 4(3), 183-204.
- Massey, C., Morriss, S., Alpass, F., & Flett, R. (2002). Farmers as technological learners: An investigation in the context of the New Zealand dairy industry. Massey University, Palmerston North, New Zealand.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.), Sage, Newbury Park, CA.
- Plummer, K. (2001). *Documents of Life 2: An Invitation to Critical Humanism*, Sage, London.
- Tedlock, B. (2000). Ethnography and ethnographic representation, in N.K. Denzin, & Y.S Lincoln (Eds), *Handbook of Qualitative Research*, 2nd ed., Sage, London, pp. 455-486.
- Toms, E. G., & Duff, W. (2002). I spent 1 1/2 hours sifting through one large box...: Diaries as information behaviour of the archives user: Lessons learned. *Journal of the American Society for Information Science and Technology*, 53(14), 1232-1238.

- Trend, M.G. (1978). On the reconciliation of qualitative and quantitative analyses; a case study. *Human Organization*, 37, 345-354.
- Wheeler, L., & Reis, H. T. (1991). Self-recording of everyday life events: Origins, types, and uses. *Journal of Personality*, 59(3), 339-354.
- Zimmerman, D. H., & Wieder, D. L. (1977). The diary: Diary-interview method. *Urban Life*, 5(4), 479-498.