Online Surveys: What, Why and How

Esther Yook Kin Loong

Deakin University

Esther.loong@deakin.edu.au

This paper is a reflection on the use of online surveys in research done by the author. It discusses what the online surveys were used for, why it was deemed appropriate for the research and how the online surveys were constructed. Discussions will focus on practical issues associated with the use of online surveys as well as identify those drawn from the literature. It will conclude with implications for educational research.

Research into web based surveys (also commonly known as online or Internet surveys) reveals many interesting results. A meta-analysis (Shih & Xitao Fan, 2008) carried out on 39 studies published between 1995-2006 which compared Web and paper mail survey modes show that mail surveys have higher response rates than Web surveys in general. College respondents were also found to be more responsive to Web surveys, while other respondents (e.g., medical doctors, school teachers, and general consumers) appear to prefer traditional paper surveys. This seems consistent with emerging evidence that suggests professional in certain fields and positions respond differently to web surveys (Diment & Garrett-Jones, 2007; Yetter and Capaccioli, 2010). Mertler (2003) reported that teachers' non response to web surveys were due to several reasons such as disinterest in topic, inability to access survey due to technological limitations, confidentiality concerns, lack of technological expertise, lack of time and lengthy survey with almost half the number of respondents citing lack of time being a major reason. Marcus, Bosnjak, Lindner, Pilischenko &Schütz (2007) studied the effect of (a) high versus low topic salience, (b) short versus long survey, (c) lottery incentive versus no incentive, and (d) no feedback and general feedback (study results) versus personal feedback (individual profile of results).on response rates and found highly salient and shorter surveys yielded considerably higher unit-response rates. Offering personalized feedback compensated for the negative effects of low topic salience on response rates and lottery incentive tended to evoke more responses only if the survey was short. While web based surveys become increasing popular as a means of data collection in all kinds of research because they are easy to set up, saves time and money and provides immediate results, caution is needed to ensure the validity of this method of data collection and the ethical implications involved (Stanton & Rogelberg, 2001; Duda & Nobile, 2010). As more research is devoted to understanding how participants respond to web surveys, it is hoped that some best practices in the administration of web surveys will emerge.

Background

The author had used web based surveys in two research projects. Both projects were related to the use of Information and Communications Technology (ICT) in school mathematics The first was a PhD project which looked at the use of the Internet in secondary school mathematics and was conducted in 2002 (henceforth referred to in this paper as the Internet Project). The participants of the online survey were teachers who taught high school mathematics from all over Australia. The second project investigated the use of ICT tools in primary school mathematics (henceforth referred to in this paper as the ICT Project). The online survey was conducted in 2009 among primary school teachers from two school networks in Victoria: an urban network and a rural network. This paper discusses what the online surveys were used for, why it was deemed appropriate for the research and how the online surveys were constructed. It seeks to draw out lessons learnt by highlighting the successes and pitfalls of this method of data collection in educational research. This paper addresses the following questions:

- What are the issues that arise in the use of web surveys?

- How can these issues be addressed to improve the response rates in future use of web surveys in educational research?

The Internet Project

In the Internet project, the author designed (using Dreamweaver) a web site entitled W3mathsEd (a short title for World Wide Web Mathematics Education) to inform the general public of this project and provided links to the information sheet, consent forms, a web based survey for teachers and a database of online resources. The survey was available on the Internet as well as paper-based. Paper surveys were mailed out to schools as well as given out in national mathematics conferences to increase the response rate. Because the research project was about the use of the Internet it was thought that it was a useful consideration to use the Internet in the delivery of the survey instrument. Online surveys were beginning to gain popularity then (in 2001) and many touted its usefulness and the expediency in collecting data (Cobanoglu, Warde, & Moreo, 2001; Sheehan & McMillan, 1999). As it was necessary to obtain data from all of Australia and perhaps beyond, it was thought that an online survey would allow for greater access to information from geographically diverse samples. Cost and time considerations came into play as the literature also showed that online surveys reduced costs and was faster to collect.

The questionnaire was made up of five major sections comprising 49 items that consisted of teacher demographics, teachers' general usage of the Internet, teachers' use of the Web for teaching specific topics, teachers' use of differing Web features, teacher-directed student uses, teachers' use with different categories of students and teachers' perception of Internet use in teaching. The survey was kept open for a period of one year.

The ICT Project

This project investigated the use of ICT tools by urban and rural teachers and students in primary mathematics. Only the teacher survey was made available online as it was felt that generally all schools have access to the Internet and teachers are used to online surveys conducted by the Department of Education. The web based survey consisted of eight main sections comprising 71 items which included the following: background information; classroom ICT infrastructures; purposes for which ICT tools were used; frequency of ICT use; different aspects of mathematics in which ICT was used; perceptions of ICT; and ICT support.

The project team considered using SurveyMonkey.com, a commercial company which designed browser operated online surveys. The basic version, which is free of charge, allowed for 10 questions per survey with a quota of 100 responses per survey and 15 pre-designed question types. For a fee, these features could be extended to unlimited questions and unlimited responses. To a certain extent the free basic version features pre-designed question types that were useful but was limiting. In this version, the responses were in the form of summary percentage response and the data could not be downloaded. The ability to download was only available in the Pro or Unlimited versions which required a fee. As a result we decided to use the services of the University's web survey designer who used the Opinion survey software to design the web survey for a fee. We were able to communicate with the survey designer what we wanted such as including a web page with the Information sheet and customized question design and images in the home page. However we were not able to meet the designer in person and had to communicate by telephone or electronic mail. This was time consuming and we had less flexibility in terms of locus of control. Many adjustments had to be made before the final product was finally of the standard we required. The survey was kept open from July to December 2009.

Findings & Discussion

Access to participants

In the Internet Project, a total of 103 secondary school mathematics teachers from various states in Australia participated via both the paper and web-based surveys. These included New South Wales, Victoria, South Australia, Northern Territory, Queensland, Western Australia, and the ACT. Of the 63 teachers who accessed the online survey only 54 answered in full. This number is slightly higher than paper based surveys. One of the possible reasons was because of the promotion of the web based survey during workshops. A presentation was given at workshops and a link was presented for participants to access the web survey. Participation was entirely voluntary. Keeping the survey open for over one year enabled me to continue to promote the survey through conferences and workshops. Hence although most surveys are short in duration, to increase participation in this case, the duration was extended and did generate a greater number of responses.

In the ICT Project, schools in one rural and urban network were informed about the project and invited to participate. Principals who consented to participate were requested to forward an email with a link to the survey to teachers in their school. A total of 47 teachers accessed the online survey but the data showed that only 36 teachers answered it (24 from urban schools and 12 from rural schools). Eleven

participants read the information sheet, continued to read the survey and some answered the demographic questions but decided that they were not continuing with the survey. This had led to a somewhat erratic number of responses in questions.

Cost & time

There were advantages and disadvantages to using web based surveys in both these projects. When considering costs, it is still considerably cheaper to use the services of a web survey designer or a commercial survey designer then printing paper surveys and mailing them out. This is especially so if large numbers of paper surveys have to be printed and sent out to distant places. If ongoing and future research intends to use web based surveys, it is perhaps more cost effective to purchase database software like FileMaker Pro and web design software like DreamWeaver and have a designated server to process all web based surveys. This gives the researcher added flexibility, control and the ability to see to what extent the survey is being responded to. Reminders can be sent to would be participants in the list via electronic mail.

Another advantage is the time saved – at a click of the mouse, emails with links to the survey can be sent. Responses are also received in the servers as soon as these are submitted electronically. These are then exported to spreadsheets without the need for manual data entry thus saving the researcher much valuable time.

Response rate

As can be seen from the literature, response rates to web surveys are generally lower than for paper surveys and this is particularly true in primary and secondary education sector (Mertler, 2003; Yetter and Capaccioli, 2010). In the research projects the author conducted, the response rates were disappointing. In the Internet Project, the response rate was comparatively higher because participants were given time during workshops to do the survey but this was not possible to do in the ICT Project. This was because firstly, no workshops were conducted for rural teachers and secondly, while workshops were held for urban teachers, their foci were not solely on the use of computers and hence computer access was an issue.

Principals who consented to participate were sent an email asking them to forward the email with the link to all teachers in their school. This has proven to be ineffective and not enlightening as we had no idea to what extent this was carried out and whether teachers had problems accessing the link. Future uses should consider getting email lists from principals and sending emails to individuals or small groups of threes to prevent 'triggering recipients' electronic spam filters' (Yetter and Capaccioli, 2010, p. 271) . Research have found that about 50 % of teachers do not want to take the time to do surveys as they claim they already have a packed work schedule (Mertler, 2003). In both the projects, shortening the surveys might yield a higher response rate as research has shown that shorter surveys (with or without incentives) have been found to encourage higher unit responses (Marcus et al., 2007). There could be two other possible reasons for the poor response rate in both these projects. Firstly, it could be related to the lack of interest among teachers in the topic of ICT use in school. It is possible that the respondents are those teachers who are comfortable using technology and thus more likely to respond to an online survey than other uninterested teachers. The second reason why teachers do not respond

could be because they do not or seldom use the Internet or ICT tools because they believe that it is not an effective teaching aid in the mathematics that they teach. To compensate for low interest in the topic Marcus et al. (2007) suggested the promise of personalised individual feedback by writing a program that automatically feeds back an individual's standing on the variables measured in the survey as compared to the entire sample. In the above mentioned projects teachers could gain much insight into how other teachers use ICT or the Internet in teaching if the responses (the open responses in particular) were collated and then sent to respondents as soon as the survey is closed.

Conclusion & Limitations

This paper is meant to raise the methodological issues associated with the use of web based surveys particularly in primary and secondary school settings. It is intended to generate discussion on how as educational researchers we can use this method of data collection more effectively. Careful and purposeful collation of response rate data and discussion and dissemination of useful strategies to improve response rates will help enhance understanding of this methodology and help move educational research forward. Further discussions are needed to shed light into how to avoid producing inaccurate, unreliable and biased data from online surveys as a result of non valid sampling, non-response bias, stakeholder bias and unverified respondents (Duda & Nobile, 2010). But this will be for another paper.

References

Cobanoglu, C., Warde, B., & Moreo, P. J. (2001). A comparison of mail, fax and Web-based survey methods. *International Journal of Market Research, 43*(4), 441-452.

Dillman, D. A., - (2000). *Mail and Internet surveys : the tailored design method* (2nd ed.). New York ; Chichester : John Wiley.

Diment, K., & Garrett-Jones, S. (2007). How demographic characteristics affect mode preference in a postal/Web mixed-mode survey of Australian researchers. *Social Science Computer Review, 25*(3), 410-417.

Duda, M. D., & Nobile, J. L. (2010). The fallacy of online surveys: No data are better than bad data, *Human Dimensions of Wildlife, 15*(1), 55 - 64.

Marcus, B., Bosnjak, M., Lindner, S., Pilischenko, S., & Schutz, A. (2007). Compensating for low topic interest and long surveys. *Social Science Computer Review, 25*(3), 372-383.

Mertler, C. A. (2003). Patterns of response and nonresponse from teachers to traditional and Web surveys. *Practical Assessment, Research & Evaluation, 8*(22). Retrieved from http://PAREonline.net/getvn.asp?v=8&n=22

Sheehan, K. B., & McMillan, S. J. (1999). Response variation in e-mail surveys: An exploration. *Journal of Advertising Research, 39*(4), 45-54.

Shih, T.-H., & Xitao Fan (2008). Comparing response rates from Web and mail surveys: A meta-analysis. *Field Methods, 20*(3), 249-271.

Stanton, J. M., & Rogelberg, S. G. (2001). Using Internet/Intranet Web pages to collect organizational research data. *Organizational Research Methods, 4*(3), 200-217.

Yetter, G., & Capaccioli, K. (2010). Differences in responses to Web and paper surveys among school professionals. *Behavior Research Methods, 42, , 266-272.*

Acknowledgements