

# Online surveys as data collection instruments in education research: A feasible option?

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## **Abstract**

Using online surveys for research purposes appears to have gained international recognition as a convenient and cost-effective data collection method. The problem is that the extant literature documenting the feasibility of this method in an education research context seems to be deficient. The question that emerges is: 'How feasible are Internet-based online surveys used as data collection instruments for educational research?' In the hope of expanding the scholarship, this article reflects critically on the successes and challenges encountered during the planning, design and activation phases of an online survey. The survey was used to collect data for a large-scale exploratory study with school governance and leadership as its overarching theme. Despite implementation of salient methodological considerations, the relatively low response rate alerts educational researchers to use online surveys as data collection instruments circumspectly.

**Keywords:** online survey; data collection; education research

## **INTRODUCTION**

This critical reflection by no means claims to be a panacea for the seemingly deficient scholarship in respect of online surveys used to collect data in educational research contexts. Rather, the purpose of the article is to inform education researchers of the salient advantages, disadvantages, successes and challenges that could emerge during the planning, design and activation phases of an online survey. The article furthermore alerts researchers in education to critical methodological considerations of online surveys that may potentially affect the quality of data. Moreover, it poses questions in respect of the feasibility of the Internet and online surveys for education research purposes.

This type of knowledge will benefit education researchers in three significant

ways. Firstly, it may spare researchers valuable effort, time and financial expense and, secondly, it may enhance the validity, reliability and quality of their research data, results and findings and ultimately the success of their studies. Thirdly, it will assist researchers in making informed decisions regarding the feasibility of using the Internet and an online survey as a data collection instrument for their own empirical research studies.

The title of the large-scale exploratory study, for which data were collected by means of the Internet and an online survey, and on which this article critically reflects, was 'School Governance and Leadership for Sustainable Quality Education for All'. Its overarching theme was school governance and leadership and its key purpose was to explore and establish the ability of parent members of school governing bodies to govern schools and manage schools' financial resources in order to ensure the delivery of sustained quality education in their communities. This new study included all the schools in the Western Cape, one of South Africa's nine provinces, in its sample, thus rendering it a comprehensive, large-scale exploratory study. Previous studies concerning school governance in Western Cape schools may be considered small to medium-scale studies, primarily conducted by students in fulfilment of full and half Masters degrees in Education. Hence, the authors sought to collect large-scale data, which they expected would prove more valid and reliable than data collected in small-scale studies.

## **ADMINISTRATIVE AND ETHICAL PROCEDURES REQUIRED FOR THE STUDY**

The study 'School Governance and Leadership for Sustainable Quality Education for All' comprised a pilot study and main study, for which the authors sought ethical clearance, approval and consent from the university and the educational authorities.

### **Ethical clearance for the study**

The authors applied to Stellenbosch University's Ethics Committee for ethical clearance for the study, which was granted subsequent to the submission of required documentation.

### **Approval and consent for the study**

Although approval and consent for the pilot study was readily granted by the Research Directorate of the Gauteng Department of Education (GDE), consent for the pilot study needed to be obtained additionally from 15 District Directors of the GDE. This GDE imperative requiring researchers to obtain approval and consent from officials responsible for departments and districts at hierarchical levels of the system, delayed the data collection process by three weeks. Approval for the main study was readily granted by the Western Cape Education Department's (WCED) Research Directorate.

## **FACTORS AFFECTING THE AUTHORS' CHOICE OF AN ONLINE SURVEY AS DATA COLLECTION INSTRUMENT**

During the initial planning of the design and methodology for the proposed large-scale exploratory study, the authors deliberated on the merits and drawbacks of conventional data collection methods and instruments available to educational researchers, such as, among others, closed and open-ended questionnaires and face-to-face interviews. Conventional data collection methods and instruments, despite being tried and tested by numerous researchers and being successfully implemented in countless studies, were regarded as inappropriate for the comprehensive, large-scale exploratory study with a sample of 1 433 schools, which the authors envisaged. The explanations for the unsuitability of conventional data collection methods and instruments for the study centred chiefly on financial and manpower constraints. The administrative workload attached to preparing a self-administered questionnaire for a sample of 1 433 schools would prove time-consuming and labour-intensive. It would involve photocopying, collating and binding the pages of 1 433 questionnaires; placing them in self-addressed envelopes; and then posting them to respondents. Once completed by the respondents, the returned questionnaires would require sorting, filing and preparation for analysis. Costs incurred for posting the questionnaires to respondents would also add up to a considerable sum of money. Face-to-face interviews would present similar challenges, since a generous budget would be a prerequisite to cover the authors' accommodation and transportation costs from Stellenbosch, across the entire province to 1 433 schools and back. Clearly, conventional data collection methods and instruments would prove inappropriate for researchers who intended conducting large-scale research while constrained by assistance from personnel, increasing research costs, shrinking budgets and declining international research funding prospects. These considerations compelled the authors to consider an alternative method that would be less labour-intensive and costly. In time, the notion of using the Internet and an electronic online survey as a data collection instrument for the study developed. The authors accordingly conducted an electronic search for literature documenting the use of the Internet and online surveys, particularly in a South African educational research context to establish if it would be a feasible option for their study.

### **The literature search and review**

The electronic search for literature documenting the use of the Internet and online surveys in an educational research context commenced with the authors accessing the following electronic databases available to Stellenbosch University students and personnel through the Stellenbosch University Library and Information Service:

- Education Resources Information Centre (ERIC): A digital library of education literature;
- EBSCOhost: An electronic journals service available to both academic and corporate subscribers. It aggregates access to electronic journals from various publishers;

- The Teachers Reference Centre: A database specifically catering for teachers' academic and research needs;
- E-Journals: Links to electronic sites of major journals around the world, co-operating with the World Wide Web-Virtual Library to provide access for libraries and scholars;
- Google Scholar: Provides a search of scholarly literature across various disciplines and sources, including theses, books, abstracts and articles.

Disappointingly, the electronic search failed to yield the expected literature and it appeared that few scholars specifically focus on the planning, design, activation and more importantly, the feasibility of online surveys in educational research contexts, despite Denscombe's (2009, 282) assertion that 'there is a growing body of research on the quality of data produced by online questionnaires, which appears to focus primarily on response rates, specifically how response rates might impact on the representativeness of online samples and investigating techniques for encouraging people to return their questionnaires'. For the authors, this implied that, in an effort to bridge the gap in the scholarship, they needed to draw on the extant literature and adapt it to fit the purpose of their study, located within a South African educational research context. The literature accessed, reviewed and adapted by the authors informs this critical reflection.

### **Types of online surveys**

Evans and Mathur (2005, 198) as well as Van Selm and Jankowski (2006, 442) explain that there are generally three ways to distribute surveys electronically:

- E-mail an introductory letter or invitation to respondents with a Uniform Resource Locator (URL) hyperlink to a web-based survey. A hyperlink is a word, image, or feature that links two thematically related websites, pages, or documents.
- Send respondents a survey embedded in an e-mail message with or without an attachment.
- Place a general request for respondents in an electronic communication environment such as a web page to complete a survey.

The authors opted to e-mail an introductory letter and invitation to respondents with a URL hyperlink to a web-based survey. The motivation for their choice was that they had free access to an online survey software package by the name of 'Checkbox', available to staff and students at Stellenbosch University who intend to conduct research electronically. Furthermore, the salient opportunities and advantages afforded by 'Checkbox' and other similar online survey software packages, on which they critically reflect in the following sections, firmly established the notion that this data collection instrument would prove eminently suitable for their large-scale exploratory study.

## **Salient opportunities and advantages afforded by online surveys**

This section briefly illuminates the salient opportunities and advantages of online surveys and reflects critically on how they impacted on the study.

### ***Global reach***

Global reach refers to the ability of online surveys to access samples distributed across vast geographic regions. Van Selm and Jankowski (2006, 438) define 'reach' as the ease with which researchers approach potential respondents. Similarly, Evans and Mathur (2005, 196) state that online surveys are able to reach participants who have Internet access throughout the world. The authors considered global reach advantageous as it allowed them to access their sample of school principals distributed throughout the Western Cape.

### ***Large samples easily accessed***

Online surveys can access large samples with ease. Evans and Mathur (ibid., 200) maintain that large samples of people may participate in online surveys, owing to the ease of access to global databases; the virtual effortlessness with which researchers can e-mail messages to participants; the availability and assistance of expert research companies; and the relatively low costs involved. Similarly, Couper (2000), Sheehan and Hoy (1999), Weible and Wallace (1998) concur that online surveys provide a means to conduct research, even in populations considered either impractical or financially unfeasible to access. The implication for the study was that the large sample of 1 433 school principals, distributed throughout the eight districts of the WCED, could be accessed.

### ***Time-efficiency and convenience***

Evans and Mathur (2005, 198) point out that owing to the speed and global reach of the Internet, researchers are able to administer online surveys in a time-efficient manner. The Internet enables the transmission of multimedia content due to the speed at which a person can download documents, thereby rendering online surveys time-efficient and convenient data collection instruments. Owing to this advantage, the authors could reduce time and travelling costs.

Additionally, since online surveys are self-administered, respondents may complete them in their own time, taking as much time as they need to answer individual questions, which is convenient. The authors felt particularly drawn to this advantage, owing to the fact that school principals in the Western Cape and possibly throughout all of South Africa's nine provinces are extremely pressurised and maintain heavy workloads. Furthermore, researchers are readily able to send follow-up reminders to participants who have not replied as a means of increasing the survey response rate (Evans and Mathur ibid., 199).

### ***Low preparation and administration costs***

The preparation and administration costs attached to online surveys are comparatively lower than most other data collection techniques. Preparation costs are reduced owing to the availability of advanced survey software and companies that specialise in the development of online surveys, saving researchers effort, time and money. The authors of this critical reflection benefited in terms of preparation and administration costs by implementing the 'Checkbox' online software package developed by a specialist software company and made available by Stellenbosch University for its staff and students, without incurring costs. Given that online surveys are self-administered, researchers also save money on paper and postage expenses (ibid.), which certainly was the case with the study on which this article critically reflects.

### ***Environmentally friendly data collection instrument***

Archer (2003) emphasises the virtual elimination of paper, which renders online surveys an environmentally friendly data collection instrument, which is an appealing consideration for researchers concerned about environmental issues.

### ***Question diversity, sequence and branching capabilities***

Online surveys lend themselves to question diversity in that researchers are able to pose a variety of questions due to formatting, sequencing and branching capabilities where respondents are directed to sections or questions that specifically apply to them, thus eliminating confusion and reducing the length of the survey and time taken to complete it. Questions may also be arranged in a specific sequence and respondents can be compelled to answer a question before advancing to the next question or completing the survey (ibid., 200). The 'Checkbox' online survey offers an 'answer required' option. However, the authors did not take advantage of this option in their survey. They reasoned that school principals are, for the most part, pressurised professional people who would voluntarily participate in the survey and should be permitted to skip questions they prefer not to answer, despite the fact that their non-response may negatively affect data quality.

### ***Ease of data entry and analysis***

An engaging strength of online surveys is the effortlessness with which data can be entered and analysed. Wilson and Laskey (2003) point out that once respondents submit their complete surveys, the researcher automatically receives the raw data, which is stored in a database from where it can be exported effortlessly to a spreadsheet and be readily available for analysis. This advantage definitely drove the authors' choice of an online survey as the data collection instrument for their study because it would not be as labour intensive as conventional data collection methods.

A critical analysis of the salient opportunities and advantages afforded by online surveys motivated and confirmed the appropriateness and suitability of an online survey for the purposes of the study. Yet, there were critical limitations

and disadvantages to using an online survey too, which potentially could impact negatively on the response rate and quality of data.

### **Potential limitations and disadvantages of online surveys**

Online surveys used as data collection instruments reveal potential limitations and disadvantages as experienced and documented by the authors in the ensuing critical reflection.

#### ***Perceptions as spam***

Mail servers, particularly those used by reputable and technologically advanced corporations, are programmed to identify online surveys as indiscriminately sent junk mail or spam and automatically block or delete them to regulate the growing scourge of viruses, which have the potential to devastate computer networks. Approximately 300 of the 1 433 invitations containing the URL to the 'Checkbox' survey, were returned to the authors' e-mail address on account of 'mail delivery failure'. Evans and Mathur (2005, 201) alert researchers to the fact that bulk e-mails sent to potential respondents in an unsolicited manner, are often perceived as spam.

#### ***Respondents' lack of online experience and expertise***

Despite the fact that the Internet has developed into a preferred global mode of communication, online surveys may present respondents who lack online experience and expertise with challenges. Denscombe (2009, 288) explains that respondent familiarity with personal computers is a variable which is likely to affect a survey's response rate. This variable could prove significant in terms of the response rate, since it was possible that some school principals in the sample may not be sufficiently computer literate and confident to access and complete the 'Checkbox' online survey.

#### ***Computer configuration***

The type of Internet connection and the configuration of respondents' computers, such as the size and settings of monitors, may affect the delivery of online surveys and the speed at which they are downloaded, thereby prolonging the time respondents take to complete a survey, which increases costs (Evans and Mathur 2005, 201). Ray and Tabor (2003) alert researchers to the fact that neatly aligned questions and answers on one computer screen may appear distorted and confusing on another. The authors experienced this problem with their survey when six principals contacted them to alert them to the fact that they were unable to access the survey via the URL link provided. This frustration was attributed to old computers and outdated software.

#### ***Impersonal method***

Evans and Mathur (2005, 202) view an online survey as an impersonal data collection method, due to the absence of personal communication and contact between the researcher and respondents. Although researchers appear to consider this a hindrance, the authors did not experience it as one. They viewed an impersonal approach to

collecting data as an advantage because the absence of personal contact potentially afforded respondents an opportunity to respond to questions freely, without feeling threatened in any way, which would enhance the validity and reliability of data.

### ***Security and confidentiality***

Evans and Mathur (ibid.) assert that online surveys accompanied by e-mail messages fail to offer respondents high levels of security and confidentiality, since computer hackers specialise in intercepting e-mail messages. Understandably, respondents may voice concerns regarding the confidentiality of their responses as well as the prospect of their personal and contact information falling into the hands of unscrupulous individuals. The authors did not experience any problems with the security of respondents nor with the confidentiality of their responses.

The literature review allows the researchers to conclude that conducting research using the Internet and collecting data by means of online surveys, present researchers in education contexts with opportunities, limitations and considerations unlike those encountered using conventional data collection methods. Andrews, Nonnecke and Preece (2003, 185) claim that: 'Electronic surveys are unique in their technological, demographic and response characteristics, which influence their design, use, and implementation. In light of this claim, survey design, sampling, pilot studies, distribution methods, response rates, participant privacy and confidentiality become critical methodological components that must be addressed.'

## **CRITICAL REFLECTION ON METHODOLOGICAL CONSIDERATIONS AND PROCEDURES FOR THE PLANNING, DESIGN AND ACTIVATION PHASES OF THE ONLINE SURVEY**

In this section, the authors reflect critically on the methodological considerations and procedures followed during the planning, design and activation phases of the online survey.

### **PLANNING PHASE OF THE SURVEY**

Sheehan and McMillan (1999) assert that researchers need to tailor online surveys to the interests and style of the target audience. In other words, online surveys require thorough planning. The planning phase of the online survey commenced with drafting a hard copy. The authors decided that the survey would comprise seven thematic sections, focusing on: (1) the school principal; (2) the school; (3) the socio-economic context of its community; (4) the ability of the principal and parent members of the school governing body to govern the school and (5) to manage its finances; (6) the provision of sustained quality education; and (7) the principal's perceptions of parents' reactions to no-fee schools.<sup>1</sup> The draft hard copy's design entailed placing instructions, questions and answer options in simple tables, a lengthy, pain-staking process that took the authors approximately eight weeks to complete due to the continual revision of instructions and questions to ensure they did not contain design



errors such as confusing ambiguities, double, split and negative questions and value-laden concepts. When the authors were satisfied with the quality of the draft hard copy they consulted an expert in the field of school governance to seek confirmation that the questions they had posed were valid, meaningful, grammatically correct and appropriate to the research theme. As soon as this process was complete, the draft hard copy turned into a final hard copy, which was ready to be translated from English into Afrikaans, so that it would be available to respondents in two of South Africa's official languages. The authors undertook this task themselves, a process which required an additional week to complete. Thereafter, the survey was transferred to and entered into the 'Checkbox' online survey, according to its design and format requirements, a novel, academically rewarding exercise that took the authors approximately four weeks to complete.

### **'Checkbox': An online survey software package**

'Checkbox' is a web-based e-Survey service, offering innovative attributes and design options, exclusively available to support academic staff and postgraduate students at Stellenbosch University using online surveys for their empirical research. This is a free service, hence an additional cost-reducing advantage. Similar online survey software packages are available, which researchers can purchase. Some software packages offer a limited free version, which allows researchers to test the instrument prior to purchasing it, to ascertain whether it meets their research requirements.

### **DESIGN PHASE OF THE SURVEY**

This section reflects critically on the manner in which the authors transferred and entered the hard copy of the English and Afrikaans surveys into the 'Checkbox' online survey according to its design and formatting considerations and requirements. The authors also explicate some of 'Checkbox's' attributes and alert researchers to considerations for survey design, such as visual layout, survey length, accuracy and clarity required for instructions and compiling and posing questions. These considerations are critical for respondents, particularly those who either have limited experience or minimal exposure to working online or who are infrequent Internet users. Skilfully incorporating these attributes and considerations in a survey's design enhances its capacity to elicit valid data from respondents.

### **The layout of an online survey**

Puleston (2011, 557) advises researchers to regard online surveys as a form of creative communication that needs to be visually attractive, perhaps containing imagery or animation. Dillman et al. (1998b) on the contrary, compare the influence of plain as opposed to fancy online survey designs and layouts on response rates and on the quality of data. The findings of their comparative study demonstrated that an uncluttered layout contributed to a higher response rate and increased question and survey completeness. Fortunately, most online surveys such as 'Checkbox' offer

a limited but attractive variety of templates from which researchers can select a visual layout comprising design elements such as background colour, font face, size and colour. The authors selected a formal, uncluttered visual layout template for their survey because they were of the opinion that the respondents in their sample, who were school principals, would prefer it to an ornate, complicated layout. Mora (2011) advises survey designers against using design elements inconsistently, as 'encountering different font sizes and colours across questions necessitates respondents to relearn their meaning every time they are used, which increases the burden placed on the respondent to understand the meaning of what is asked'. With this advice in mind, the authors opted for a pale beige background and a black Arial 12 font with section headings in uppercase bold throughout their survey.

'Checkbox' boasts an edit function, which allows researchers to edit instructions or questions containing spelling, language or formatting errors or ambiguities, which they may have overlooked. It also has a translation function, which allows researchers to translate and activate the survey in a variety of languages, other than English. Furthermore, 'Checkbox' offers the option to upload a company or institutional emblem or logo, which not only lends colour and graphics to the survey, but informs respondents immediately of the survey's origin. The authors uploaded Stellenbosch University's attractive and unique logo of an oak leaf and acorn to imbue the survey with a sense of formality and so that respondents would recognise immediately that the survey had originated in a legitimate, reputable tertiary education institution.

### **Clarity in writing and understanding survey instructions**

Ray and Tabor (2003, 37) caution researchers against using vague and ambiguous instructions. 'In any self-administered survey, instructions must be clear, as there is no option for personal help. Respondents may become frustrated and quit without completing the entire survey'. Since online surveys such as 'Checkbox' are self-administered, it is crucial that all instructions to respondents are articulated succinctly, so that respondents can respond accurately and promptly. This aspect of survey design is particularly critical in the South African education research context, where respondents may include parents from impoverished communities who may possess limited or no literacy and numeracy skills. Even though all the respondents in the 'Checkbox' online survey were literate and numerate school principals, the authors deemed it prudent not to use erudite language and to avoid concepts that were too technical.

### **Survey length and estimated time respondents take to complete the survey**

The length of an online survey can contribute profoundly to its success or failure. Mora (2011) avers that researchers may be tempted to crowd as many questions as possible into their online surveys with the reasoning that, 'since we are conducting a survey, let us get as much out of it as possible'. However, Mora (*ibid.*) warns that the only results researchers may expect from long online surveys are poor quality

data because empirical evidence exists, which indicates that non-response and abandonment rates correlate highly with survey length. In an effort to sidestep this potential weakness, some researchers intentionally omit informing respondents of the approximate time it will take them to complete the survey. Galesic and Bosnjac (2003) warn researchers not to underestimate respondents' intelligence since they are able to detect the precise length of the survey from its progress bar and will not hesitate to abandon the survey if they perceive it as too long and time-consuming. The findings that emerged from a study by Couper, Traugott and Lamias (2001) focusing on web survey design indicated that the inclusion of a progress bar in an online survey reduces a respondent's loss of interest in it.

Two further weaknesses which manifest in lengthy online surveys and which the authors attempted to eliminate are satisficing and primary effects. Mora (2010) explains that rating and matrix type questions that have numerous items and alternatives, increase respondent fatigue and boredom and frequently result in respondents adopting a 'satisficing' behaviour where they select the same scale-point to rate all items without paying them much attention. Primary effects occur when respondents select the first option or answer, thereby expending the least effort to satisfy the question, rather than considering answers that represent their opinion accurately.

## **Compiling and posing survey questions**

Circumspectly considering aspects such as wording, sequence and format when compiling and posing questions is indispensable for the activation of an online survey aimed at eliciting valid data.

### ***Question wording***

Mora (2010) asserts that formulating succinct and unambiguous survey questions can prove challenging. Errors that can render data invalid, often arise from unfamiliar, complex or vague words and concepts, incomplete sentences, splitting questions into two parts, double questions and double negatives. Similarly, 'Survey Monkey' guidelines (2009, 7) alert researchers to words that need to be avoided in questions, which include absolutes such as never, always, just, only, often, usually and generally. Abbreviations should also be avoided.

Researchers also need to avoid value-laden words, which may elicit biased responses. Prior to activating the online survey, the authors fortunately discovered that in a rating scale, they had formulated a certain question as follows: 'How would you rate the ability levels of the parent members of your school governing body to prepare the school's annual budget effectively?' The word 'effectively' is value-laden and almost certainly would have resulted in respondent bias and elicited invalid data. The question simply should have read: 'How would you rate the ability levels of the parent members of your school governing body to prepare the school's annual budget'. It follows that using neutral words yields a more objective response.

### *Question sequence*

Mora (2010) advises that questions need to follow a logical flow since sequencing inconsistencies can confuse respondents. ‘Checkbox’ has a question branching option, also referred to as ‘skip logic’, which sequentially directs certain respondents to relevant follow-up questions, which require answering. Branching enhances validity and reliability of the data. The authors used the branching option in their survey in their quest to gather meaningful data regarding the budgeting abilities of parent members of school governing bodies in no-fee schools. To this end, they posed questions which only the principals of no-fee schools were required to answer. The principals of fee-charging schools skipped these questions and continued to answer questions posed in subsequent sections. The authors discovered incidentally that an additional advantage of using the branching option is that it reduced the survey’s length and completion time.

### *Question format*

Different question formats have different uses, advantages and disadvantages, which implies that researchers need to select question formats that will accurately elicit the type of data they require to answer their research questions successfully (Mora 2010). In light of Mora’s (ibid.) advice, the authors reflected on and selected specific question formats, which in their opinion, would elicit valid data and shed light on parents’ ability to govern schools and manage schools’ budgets effectively. The formats, which the authors used to pose their questions, included:

- Radio buttons, which provided respondents with a list from which they could select one option. The authors used radio buttons frequently throughout the survey, particularly for questions requiring single responses such as principals’ qualifications and years of experience.
- Checkboxes, which provided respondents with a list from which they could select multiple options. On the concluding page of the survey, the authors posed a checkbox question asking principals to provide them with data concerning the quality of the survey, as depicted in Figure 1.



[Checkboxes]

**SECTION 8 - THE QUALITY OF OUR SURVEY**

**8.1 Please provide us with feedback regarding the quality of our survey.**  
**The survey is:**

Quick and easy to complete

Interesting

Educationally relevant

Too long

Too complicated

Other, please provide us with your opinion.

Figure 1: Checkbox question concerning the quality of the survey

- A drop-down list comprising education districts in which the respondents' schools were located. The authors found the drop-down list advantageous in its space-saving ability.
- Open-ended single-line text allowing freeform text with formatting rules. The authors used this question format to elicit numerical data regarding the amount of fees schools charged before and after the declaration of schools' no-fee status.
- Open-ended multi-line text allowing freeform text within a box with a specified number of rows and columns. The authors used this question format to elicit principals' views as to whether or not no-fee schools ought to be allowed to procure and pay for the services of additional teachers. The authors needed to check that they had provided sufficient lines to accommodate respondents' answers.
- Matrixes and rating scales are used to explore the frequency of respondents' behaviour or their attitudes toward certain phenomena. The authors posed questions in matrixes and rating scales to elicit data regarding parents' educational qualifications and to rate their ability to govern schools and to manage schools' finances. According to guidelines issued by Survey Monkey's Smart Survey Design (n.d., 11) it is practical and prudent to order the ranking or rating options from low to high or negative to positive e.g. Strongly Disagree, Disagree, Agree and Strongly Agree, proceeding from left to right. Researchers need to ensure that rating scales consistently follow the same format throughout the survey to prevent respondent confusion. In addition, some surveys may only label the outliers or endpoints of the scale, but it is preferable to assign either a label or number to each rating scale, as demonstrated in Figure 2.

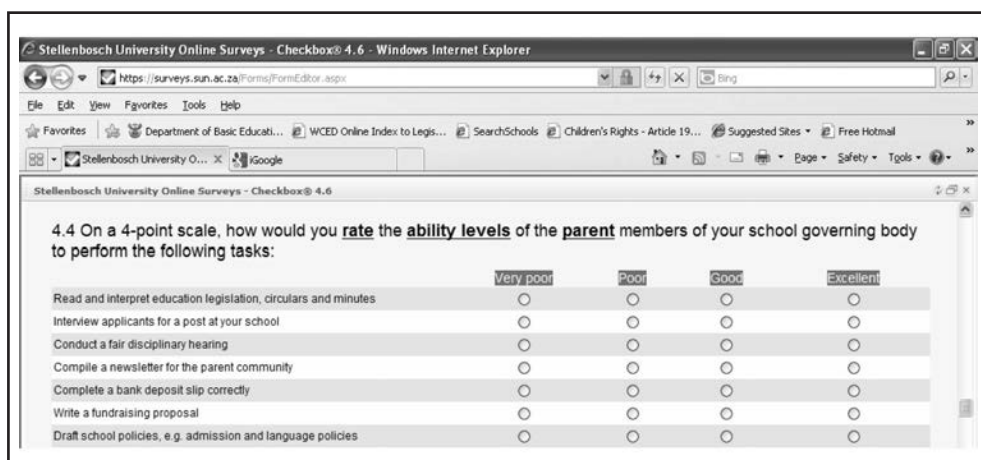


Figure 2: Example of a rating scale used in the 'Checkbox' online survey

The authors experienced perplexing methodological challenges in the design and construction of questions for the 'Checkbox' online survey, particularly in regard to formulating and wording questions. They constantly deliberated on the possibility that certain questions they had posed might not make sense to the respondents and might elicit invalid data, which would render the entire research project worthless. In an effort to assess the quality of the survey questions, the authors convened a group of Master's degree students in their department, many of whom were school principals, deputy principals and heads of department. The authors demonstrated the survey to the students and asked them to comment on its format, length and the type of questions it posed. The students' insights and contributions were extremely valuable and several questions were reformulated and improved upon due to this consultative process.

In light of these uncertainties, the authors concur with Mora (2010) who claims that: 'The advent of user-friendly online survey tools in recent years has created the illusion that anybody can write a survey questionnaire. However, there are many methodological concerns to consider when creating a questionnaire if one intends gathering high-quality data in a survey.'

## ACTIVATION PHASE OF THE SURVEY

The authors activated two studies, the first being a pilot study and the second the main study. The activation phases comprised selecting samples, compiling invitations and e-mailing them together with the 'Checkbox' online survey to respondents.

### The pilot study

The purpose of the pilot study was to test the precision, accuracy and reliability of the data collection instrument, a self-administered online survey known as 'Checkbox',

in order that weaknesses or flaws in its design, such as ambiguous and confusing instructions or questions, could be rectified prior to its activation for the main study.

The sample for the pilot study comprised principals of 97 public primary and secondary no-fee and fee-paying schools located in 15 education districts in Gauteng. Gauteng was selected for the pilot study because with the exception of the Western Cape, it had the most schools with functioning e-mail addresses. According to the 2008 and 2009 Annual Surveys for Ordinary Schools released by the Department of Education, 26 per cent of South Africa's schools have functioning e-mail addresses. The schools selected for the pilot study included former Model-C,<sup>2</sup> urban, township, rural and farm schools categorised into five quintiles according to, among others, their socio-economic contexts and the educational levels of their communities. The authors purposely selected schools from each of the five quintiles that had e-mail addresses, so that principals would be able to receive e-mails containing the invitation to participate in the study and the URL link to access and complete the survey online.

## The main study

The main study survey was activated subsequent to the pilot study. It aimed at eliciting data, which would be statistically analysed and interpreted to answer the research question and achieve the study's aims.

The sample for the large-scale main study comprised principals of 1 433 public primary and secondary schools from the five quintiles, located in various socio-economic contexts within the eight districts under the jurisdiction of the WCED. Statistics indicate that Gauteng and the Western Cape are two of the better performing provinces in South Africa in terms of academic performance and achievement, which provided further motivation for conducting the pilot study in Gauteng schools and the main study in Western Cape schools. As in the pilot study, the authors purposely selected schools that had e-mail addresses so that principals would be able to receive e-mails containing the invitation to participate in the study and the URL link to access and complete the 'Checkbox' survey online.

## Survey invitations

The invitation was placed on the first page of the survey. In it, the authors informed the responding school principals of important details in respect of the survey, which included:

- The title and purpose of the research study and the name of the academic department and tertiary institution conducting it;
- The letters of consent from the Research Directorates of the respective education departments with a link to the letter for the responding school principal's perusal;
- An undertaking by the authors to uphold confidentiality in respect of the responding principal and school;

- Notification to the responding school principal that participation in the survey was voluntary and that no penalty would be incurred by principals who preferred not to participate in it. Respondents were also informed that they would not be remunerated for participating in the survey;
- The approximate time required to complete the survey;
- An invitation to contact the authors in the event of a responding school principal having a concern regarding the survey;
- An undertaking to disseminate a summary of the survey findings once finalised;
- An advance thank-you statement to the responding school principal for showing interest in the project and for responding to the survey;
- The authors' contact details.

The Letter of Informed Consent was also placed on the first page below the survey invitation. Clicking on radio button 1 enabled responding principals to provide informed consent and gain access to the survey while principals who preferred not to participate could opt out by clicking radio button 2.

No incentive was offered to school principals as a motivation to participate in the pilot study. A 'lucky draw' with a laptop computer was offered as a prize to motivate school principals to participate in the main study survey. Guidelines suggested by 'Survey Monkey' (2009, 3) concerning the offering of incentives, advise researchers never to offer any incentives on which they cannot deliver. Brennan, Rae and Parackal (1999) caution researchers against offering incentives that may be too attractive as this may prompt respondents to engage in multiple submissions to increase their chances of winning.

### **Activating the 'Checkbox' survey**

The authors sourced the e-mail addresses of the Gauteng schools for the pilot study sample from an unofficial Internet website listing schools' e-mail addresses as well as from the Education Management Information System (EMIS) on the Department of Education's official Internet website. The authors sourced the e-mail addresses of the 1 433 Western Cape schools in the main study directly from the WCED. A number of typing errors leading to incorrect e-mail addresses were discovered in the lists during checking and even though all errors in the e-mail addresses were rectified, many mail delivery malfunctions that increased the total of non-response errors, occurred.

Since the WCED does not permit research and data collection in the fourth term of the academic calendar, the authors were limited to collecting data in the second and third terms only. The authors deliberated on the month and day of the week that would be most suitable for e-mailing the survey to school principals, taking public holidays, beginning and end of terms and school holidays into account. One of the guidelines for online survey activation suggested by 'Survey Monkey' (2009, 3) is



that if the survey target audience consists largely of professional people, researchers should avoid activating the survey on Fridays, Saturdays, Sundays and Mondays, since many professionals clean out their inboxes on Monday mornings.

There was also a degree of uncertainty as to the period of time respondents should be afforded to complete and submit their surveys. It was decided that three weeks would prove a reasonable time-frame and the end-date was set and specified in the invitation. Reminders were sent to the school principals three days prior to the end-date. Submission of the survey occurred automatically upon its completion and was returned to 'Checkbox' where it was stored until required for statistical analysis.

## **CRITICAL REFLECTION ON RESPONSE RATES AND RESULTS**

The ensuing discussion focuses on the response rates and results that emerged from the activation of the pilot and main studies.

### **Pilot study response rates and results**

The pilot study was launched in mid-June, three weeks prior to the end of the second term. Despite several reminders sent to school principals during this activation period, not one response was received. The authors urgently sought reasons for the nil response rate and contacted four school principals in the sample telephonically. One principal alleged that his school's e-mail address had changed recently and the remaining three claimed they had not received the survey at all. However, the person responsible for the survey at the Information Technology division at Stellenbosch University provided evidence that indicated that all invitations and surveys had been delivered successfully. This challenge raises particular questions concerning the effectiveness of distributing online surveys by means of e-mail and the Internet.

### **Main study response rates and results**

The main study was launched two weeks after school opened subsequent to the winter holidays. The authors considered it prudent not to overwhelm school principals with the survey directly after returning to their offices after the holidays, since principals may delete unsolicited and unofficial e-mail messages in their computer inboxes.

The end-date for the survey was set and responses were eagerly awaited. At the end-date, 'Checkbox's' response rate monitor indicated that 64 of a possible 1 433 completed surveys were received, a response rate of 4 per cent. Owing to the disappointing response rate, the survey was again sent to school principals with an extended end-date. At the end-date, 'Checkbox's' monitor recorded 44 completed surveys from 1 433 potential respondents, a response rate of 3 per cent. Still dissatisfied and disappointed with the low response rate, the authors sent the invitations and survey to school principals on a third occasion and pleaded with principals to respond to the survey, reminding them of the laptop computer on offer in the 'lucky draw'. Yet again, 'Checkbox's' response rate monitor indicated that 37 of a possible 1 433 completed surveys were received, a declining response rate

of 2 per cent. Finally, in a determined attempt to collect data but mindful of ethical constraints, the authors contacted the District Directors of the WCED and asked their assistance in distributing the survey via e-mail directly from their offices to the school principals in their districts and in encouraging them to respond to it. The District Directors willingly assisted, although one Director’s comment, ‘The principals are facing a tsunami of surveys’ provided a plausible explanation for the survey’s low response rate. This final attempt at collecting data that would answer the study’s research question yielded 220 of a possible 1 433 responses, a response rate of 15 per cent. Thus, a final response rate of 24 per cent was achieved. Although the authors were initially sceptical regarding the quality and validity of the collected data, the expert statistician with whom they consulted reassured them that a 24 per cent response rate to an online survey was not atypical and that the data, once statistically analysed, would yield valid and reliable findings.

### Plausible reasons and explanations for the relatively low response rate

In seeking a plausible explanation for the relatively low response rate, the authors firstly consulted the data that emerged from the question they posed in the survey regarding its quality. The findings that emerged from the data are presented graphically in Figure 3.

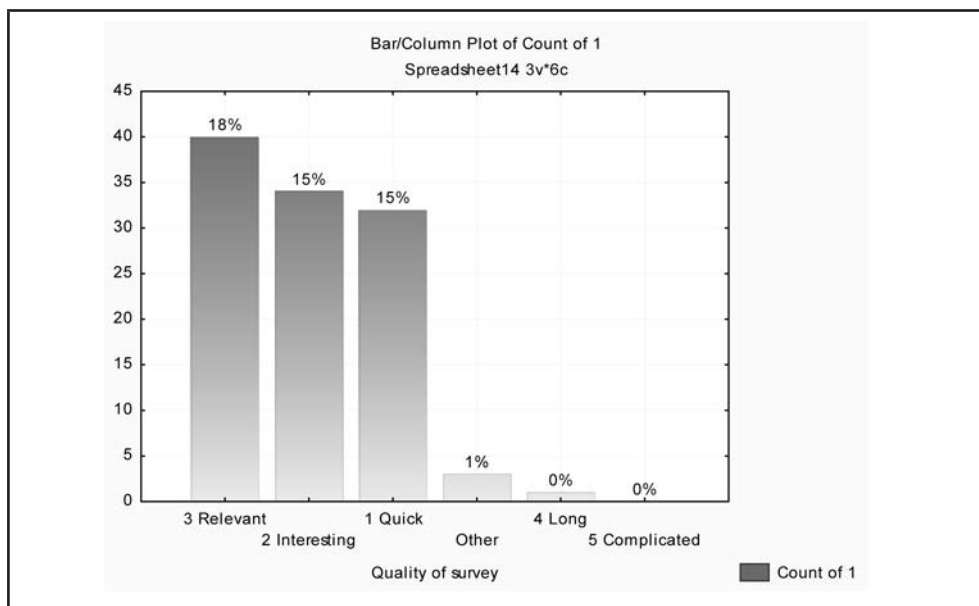


Figure 3: Graphic representation of data regarding the survey quality

Most respondents found the survey relevant, interesting and quick to complete. No respondents indicated that the survey was either too long or complicated. It followed

that the relatively low response rate could not be attributed to the survey design. The only plausible explanations for the low response rate that emerged from the authors' critical deliberation and reflection include:

***Prior notification***

Van Selm and Jankowski (2006, 443) draw on Sheehan and McMillan (1999) who conducted a meta-analysis on several methodological issues in e-mail surveys and found that the speed of response is faster from individuals who received pre-notification of their possible participation in the online survey. Similarly, Schaefer and Dillman (1998) as cited by Van Selm and Jankowski (2006, 448) advise researchers to send personalised letters to prospective participants prior to activating online surveys. The authors of this article did not implement this consideration, owing to the large sample.

***Sensitive information***

School principals may have considered some of the questions as too sensitive, particularly those probing for confidential data on the management of financial resources and budgeting.

***Faulty e-mail addresses***

Judging by the 300 odd non-response items that were lost due to mail delivery failure, there is a strong probability that many e-mail addresses sourced by the authors were faulty, which begs the question of how effective the communication and dissemination of important official circulars and minutes between the District Offices and the respective schools for which they are responsible, is.

***Perceptions as spam***

Some of the 'Checkbox' surveys may have been automatically deleted from respondents' e-mail spam boxes.

***Respondents' lack of online experience and expertise***

It is possible that some school principals may not have the confidence and computer skills to access an Internet online survey.

***Computer configuration and formatting***

As mentioned previously, there were a few school principals whose computers were old and the configuration and formatting were outdated and did not comply with 'Checkbox's' configuration and formatting.

***Research overload***

It appears that there may be a proliferation of research studies throughout the Western Cape involving school principals, educators and learners. If the number of research

projects emanating from within the WCED as well as from the four universities in the Western Cape is taken into consideration, it may be deduced that schools are being inundated by research projects, which may result in research overload. The pressure on universities to deliver more Masters and Doctoral degree graduates in addition to the pressure posed on academics to deliver optimal research and publication rates, may in due course result in respondent saturation point. In the light of future level 8 programmes requiring Honours level students to undertake research projects, this may become a significant problem. Potential respondents may become progressively opposed to participation in research projects. On the contrary, the increased demand for research by academics may create the opportunity for students to use online survey methods for small-scale research, which may provide students with opportunities to access data from geographically isolated schools, which may not have been subjected to high research rates in the past.

### ***E-mail burnout***

Bachmann, Elfrink and Vazzana (2000) assert that as people become accustomed to communicating by means of e-mail, the more they will become reluctant to respond. People may become apathetic towards online surveys as the novelty wears off. Burkeman (2001) claims that the volume of sent and received e-mail messages has increased substantially and may result in 'e-mail burnout'. Individuals may delete up to 60 percent of their messages based on the subject line alone.

## **RECOMMENDATIONS**

The apparent gap in the scholarship in regard to the feasibility of using online surveys as data collection instruments for educational research purposes, particularly in a South African context, concerned the authors in an academic and professional sense. This is because education scholars who intend undertaking educational research studies in South African schools and educational institutions, in reality do not have access to sufficient, recent literature to guide and inform them. They may feel perplexed and hold either legitimate or unfounded reservations regarding the feasibility of using online surveys for their research, particularly in terms of the validity, reliability and the quality of data and results that this data collection instrument may elicit.

The primary question, which this critically reflective article posed and attempted to answer, is: 'How feasible are Internet online surveys used as data collection instruments for educational research purposes in a South African context?' In response to this question and at this point in time, the authors wish to advise educational researchers to exercise profound circumspection when considering online surveys as data collection instruments for their studies, particularly in studies contextually located in South Africa. They base their recommendations and advice on the relatively low and disappointing response rate of 24 per cent that they achieved with the 'Checkbox' online survey, despite being cognisant of and implementing

most of the salient methodological considerations underscored in the literature with the added incentive of a laptop computer as a prize in a lucky draw. They also draw support for their recommendations from Denscombe's (2009, 281) assertion that 'there are still several unanswered questions concerning the use of online surveys as data collection instruments for research purposes'.

These recommendations, however, should not be accepted as either absolute or generalised to all prospective studies with online surveys as data collection instruments. As is the case with conventional data collection methods, contextual factors undoubtedly play a profound role in the quality and quantity of data elicited.

## CONCLUSION

In an effort to resolve the question regarding the feasibility of online surveys for educational research purposes, the article firstly informed researchers of the types of online surveys presently available to researchers; illuminated their advantages and successes; and alerted researchers to their challenges and disadvantages. Secondly, the article reflected critically on salient methodological considerations for the visual layout, question formulation and formats of surveys as well as the compilation of e-mail invitations, aspects which may profoundly affect the response rates and quality of data elicited by online surveys. Finally, it attempted to assist and support educational researchers, particularly in a South African context, in making informed choices and decisions regarding the feasibility of using online surveys as data collection instruments for their empirical studies. The authors trust that this critical reflection will prove to benefit fellow researchers in education positively.

## NOTES

1. A no-fee school is funded by the State and may not charge school fees, as opposed to a fee-charging school that is partially funded by the State and is permitted to charge school fees.
2. Prior to 1994, Model-C schools admitted white learners only but have since become fully racially integrated.

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