EVALUATING SURVEYS AS ASSESSMENT TOOLS: THEORY< METHODS< AND MECHANICS OF ONLINE SURVEYS

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Abstract: This paper scans and compares various available survey creation tools as to what each provides for free or for cost. It includes a survey of the literature on how to create and administer effective surveys for libraries and educational institutions. Survey length and the means of advertising them are also considered as elements in their success. The core of a good survey is the question set, so brief descriptions have been made on the types of questions that are most effective depending upon the information needed. The goal of this paper is to help the audience make informed decisions about online survey tools and how to develop effective and objective assessments.

Keywords: survey, surveys, online survey tools, library surveys.

There are surveys everywhere you look, and many are now online. There are so many that a phenomenon called "survey fatigue" has emerged. Everything from user or product satisfaction, population information in a census, attitudes and opinions, serious social science research, political opinions, and what could be called social trivia are candidates for a survey/questionnaire. It is obvious that not all survey creators have studied the basic principles of survey design.

There are many different names for a "survey:"
- Survey
- Questionnaire
- Poll
- Census

Typical types are
- Self taken or self administered – paper, phone or online
- Interview – face to face, phone

A great deal of work should be done before crafting a survey. The most obvious first question is whether a survey will satisfy your information needs and whether you really need that information. What do you want to know? Who is the audience or population you are targeting? These are the first two questions that should be considered. When thinking about the objective of your survey, consider that some preconceived idea of what the survey will reveal is necessary. As in any research, a hypothesis must be created unless one is just information gathering. In the design of a survey one should be careful to ask questions that would disprove your overall hypothesis. Leading questions are a

waste of everyone's time. Another mistake is not to allow for a non-response such as "not applicable (N/A) or "don't know" for scaled survey questions. Allowing this option prevents the survey from forcing an unwanted answer from a respondent, and at the same time, the non-response data itself may be helpful.

With the advent of many survey software packages, some free, there has been an exponential increase in the number of surveys online. Ironically a good overview of survey construction and principles is available from Wikipedia, an online encyclopedia. The "Questionnaire construction" pages provide the basics.

There are a number of good practices that emerge in almost all the literature about surveys:
- Ensure that the survey is necessary. Ask if there are other places the information can be found.
- Perform a literature search to look for other similar surveys.
- Explain the focus of the survey up front.
- Insure for privacy of respondents, if necessary.
- Define terms. Don't assume people understand acronyms or jargon.
- Make the questions clear and not leading.
- Keep the survey short enough to be palatable.
- Treat the population being studied with respect, not just as scientific objects. The researcher's ambition should not be motivation to run a survey.
- Allow for a non-response instead of forcing an answer (for example, "N/A", "don't know", or "undecided").
- Test your survey with a group similar to the population being surveyed.

Many different types of questions are available and the question type should best fit the information sought from the question. The most common types are:
- Contingency questions – based on previous answers.
- Matrix of choices or drop-down menus.
- Closed response questions such as yes/no, multiple choice, or scaled (Likert, etc).
- Open ended response questions – unstructured text boxes, completion of sentence, story, or picture; word association.

Keep in mind that the type of question itself (such as multiple choice) could lead the respondent to answer in a certain way. The question type should allow for as much latitude in answer as possible while still drawing the needed information. Likert scales should be used when a broad rating scale is good information. If specific parameters are needed, multiple choice might be a better option. Experiment with different types of questions to get at the same information before deciding on the best option.

The order of questions can make a difference in many ways. For instance, respondents may not want to enter personal information at first because they want to know if the survey is serious. An illogical order of questions can create frustration and thus lead to a non-response. Good question order practices ensure that:

- Questions flow logically from one to the next.
- The answer to a question is not influenced by previous questions.
- Questions flow from the more general to the more specific.
- Questions flow from the least sensitive to the most sensitive.
- Questions flow from factual and behavioral questions to attitudinal and opinion questions.
- Questions sflow from unaided to aided questions.
- According to the three stage theory (also called the sandwich theory), initial questions should be screening and rapport questions. Then in the second stage, you ask all the product specific questions. In the last stage you ask demographic questions.

(Fom "Questionnaire Construction" in Wikipedia:
http://en.wikipedia.org/wiki/Questionnaire_construction.)

Libraries' Use Of Surveys

Libraries tend to use surveys to gauge service satisfaction, but too often some simple mistakes are made. One is the use of library jargon or terminology without explanation. Even the simple term "collection" is not necessarily familiar to everyone; adding something like "what the library owns" may be helpful. Some survey questions may also be based on traditional library theories such as collection development ideas that are becoming outdated.

Research Ethics

At the University of Connecticut (and all educational institutions), research ethics are clearly defined and strictly monitored. The website Principles and Ethics in Educational Research (http://www.gifted.uconn.edu/siegle/research/Ethics/ethics.htm) is a web-based course available at the University to help researchers follow the rules of ethics.

The rules and guidelines in the United States were developed in part in response to some egregious violations in U.S. history such as the Tuskegee syphilis study begun in Macon County, Georgia (U.S.) in 1933. In that study undertaken by the U.S. Public Health Service, 399 African-American men with syphilis were intentionally left untreated so that the Service could monitor the long-term effects of the disease. Fortunately, the use of human subjects for surveys is rarely as damaging, although there could still be danger of harm as a result of participation in some surveys.

As the rules of ethics relate to surveys, the focus is on protecting survey respondents from harm as human subjects for research. The researcher is bound to protect the respondent from undue harm (physical or psychological), to protect privacy, and to obtain informed consent for participation. The researcher is bound to warn subjects of any potential harm to themselves in the process of taking part in a given project or survey. Harm might be due to self-disclosure and loss of privacy, and in the online world this self-disclosure can take on an ominous tone.

Marra and Bogue (2006) note (p. 9):

> *Although respondents seem to feel comfortable providing "self-disclosing" information in e-mail based assessments, one needs to be aware of the potential security issues associated with collecting data either online or via email. We have all been made aware of the fact that internet connections and data can be monitored. When data is in fact very sensitive, or when university human subjects rules apply, survey designers may be required (either ethically or legally) to remind respondents of this risk.*

In Principles and Ethics in Educational research (http://www.gifted.uconn.edu/siegle/research/Ethics/ethics.htm) we find this definition of "research" bound by such a code of ethics:

> *Only activities that meet the definition of research with human subjects need review by an Institutional Review Board (IRB).*
> *Research is a*
> - *Systematic investigation (this might range from applying scientific methodology involving independent and dependent variables to an ethnographic study of a community)*
> - *Including research development, testing, and evaluation (this also includes pilot studies, feasibility studies, and other preliminary studies)*
> - *Designed to develop or contribute to generalizable knowledge (an essential consideration is whether it is the intention of the investigator to contribute to generalizable knowledge).*

It is important to note that surveys of a local population for the purpose of assessing services are not considered research (in the sense of researching human subjects) and so do not fall under the constraints of an Institutional Review Board. To quote further from this same source:

> *Some activities that involve interactions with humans and data gathering many not fit the definition of research with human subjects, since they are designed to accomplish something else, such as in-house quality improvement. For example, a survey of college students about their university's counseling services may be designed to improve the service delivery for students on campus. Publication of the results is sometimes used as a measure of whether research is generalizable, but this is too narrow a measure for two reasons. First, not every study will produce results worthy of publication. Second, there are other ways that results can be made available to others. They may be presented at a conference. They may be shared with colleagues through the Internet, appear in a dissertation, provided to Board members in a project report, or archived for future research).*

Paper Or Online?
Paper surveys have some elements that cannot be translated directly into an online version, such as a question within a question. For example, a list of options may be presented as one answer in a multiple choice question in paper, but this cannot be done within a single question online. On the other hand, online surveys allow controls (requiring answers, validating answers) that are impossible to enforce in paper.

Online surveys also allow distribution to a vast number of people at once. In the case of the Academic Center at Avery Point, we use campus distribution lists to reach a large population. We are, however, targeting a specific population. In cases where surveys are aimed at the general public, the distribution by email can be even larger, bordering on spam. The term "going viral" is used to mean surveys that are distributed to a listserv with an invitation to individuals to pass it on to other lists or groups, such as on Facebook. Requests often ask that further distribution follow a specific demographic. Facebook is becoming a widely used way to publish surveys and send invitations to them. This method allows survey makers to target particular demographic groups as they are self-defined in these social networking sites. (See Social Media Research – Using Facebook for survey invitations and Market Research [June 23rd, 2010] by Vivek Bhaskaran on ResearchAccess http://researchaccess.com/2010/06/social-media-research-using-facebook-for-survey-invitations-and-market-research/)

Marra and Bogue (2006) mention (p. 9) that user limitations play a role in the decision as to whether to use an online tool or to distribute a paper survey. At the University of Connecticut Avery Point Academic Center, our experience has been that a combination of both is most effective. In the early years of our Academic Center surveys we produced paper only. A few years later the survey was expanded to include both an online survey (link sent via email to all Avery Point undergraduate students) as well as a paper survey handed out to visitors in the Center. The number of responses immediately more than doubled.

Paper surveys are collected and manually entered into the online survey database. (In SurveyMonkey, there is a "Manual data entry" feature in "Collecting responses".) This enters data from the paper respondents into the statistical mix from which reports and charts are then made readily available. (See the comparison chart to learn which services offer reports and charts free of charge.)

Online Survey Tools
There is a plethora of online companies offering survey tools. Many will take the survey creation and posting out of the user's hands completely, for a fee. Most online survey tools offer the hands-on user a free or trial account option with added "upgrade" features for paying customers.

For the purposes of this study, we have restricted our analysis to tools that, while offering more power through a subscription, are also available in at least some limited form for free. This allows users who might potentially be interested in a subscription to test-drive the software with no commitment, and it also allows users with limited needs or resources to provide their institutions with surveys (albeit limited) at no cost beyond that of their time. In determining whether to pay for a subscription or not, it is advisable to factor in the time that it takes to work around the lack of any additional features only available through upgrade. In other words, if copying an existing survey is only available to paying customers, and this feature is needed for a project, then it might be more cost effective to obtain a temporary subscription to the service rather than investing the staff time needed to manually recreate many copies of a survey.

The specific features that this study focuses on for comparison of free tools are:
- Number of questions allowed.
- Number of responses allowed.
- Number of surveys allowed.
- Length of time surveys are accessible.
- Languages supported.
- Question Types provided.
- Validation/required responses allowed.
- Skip logic / Branching availability (this is a powerful feature that allows respondents to be directed to different places within the survey depending upon the way that they answer a particular question).
- End date allowed.
- Custom redirect to any website upon completion (most free versions bring respondents to their own website as additional advertisement upon completion of surveys).
- Printable version available for paper survey distribution.
- Responses downloadable.
- Creation and downloading of custom charts available.
- Cost of least expensive paid version (in USD).
- Monthly cost (in USD) of the least expensive paid version.

According to Marra and Bogue (p. 3), testing functionality ahead of sending out a survey is important. The testing that was done in our research proves this to be quite true. Functionality does not always work as advertised, so testing is important even if it is not offered as a part of the tool's functionality (in the sense that one can test before saving). When testing is not part of functionality, it is still possible to test the survey by taking it several times and then clearing the test responses before opening the survey to respondents.

As a final caveat, Marra and Bogue (2006) note (p. 11) and cite others to the effect that easy is not necessarily good. Online survey tools have made the creation and distribution of surveys an incredibly easy task. They do not, however, ensure that surveys will be effective, unbiased, or interpreted uniformly by all respondents. Other best practices must be followed to ensure a quality survey and reliable results.

Other online survey tools were tested, but here are the specific tools that we examined for comparison. For each tool, a free account was created and used for testing to compare features and functionality. The comparison information in this paper was last checked on 10/12/2010. Survey tools may have made changes to their offerings since that time, so beware that this comparison serves only as a general guide and current features must be investigated before purchasing services.
- SurveyMonkey
- Survey Methods
- QuestionPro
- eSurveysPro

- FreeOnlineSurveys

SurveyMonkey (http://www.surveymonkey.com/Home_Pricing2.aspx) has offices in Palo Alto, CA, USA, Portland, OR, USA, and Funchal, Portugal.
SurveyMonkey is widely known and used, and the University of Connecticut subscribes to the full version. One feature that is well appreciated is the clear presentation of features that are available with a paid version. Upgrade is only a click away, but at least SurveyMonkey does not make the lure to the paid version an inconvenience, as do some other tools.

Survey Methods (http://www.surveymethods.com/registration.aspx) is based in Dallas, TX, USA.
Unlike SurveyMonkey, Survey Methods does not clearly display the fact that some available features require an upgrade. At the bottom of the question creation screen, there are three optional miscellaneous settings that appear to be available: Making the answer mandatory, Displaying answer options in random order, and Creating a short descriptive label for the question that would be used as the column heading in an export of the results. Choosing any of those options takes you out of your survey question to a screen inviting you to upgrade. If you cancel to avoid the upgrade, you are directed out of the survey question entirely and lose the information already entered into the question. The poll feature (in online parlance, usually a single question survey) is very easy to use and also easy to embed in a webpage or in WebCT (Blackboard web course tools pages). The results may be instantly displayed after the visitor 'votes'. Survey Methods does not allow results sharing with a free account for surveys, but it does so for polls.

QuestionPro (http://www.questionpro.com/free-survey-software.html) is based in Seattle, WA, USA.
QuestionPro is a slickly presented professional tool. It provides a high level of support, including free webinar online training sessions covering basics, advanced survey creation, sending survey invitations, and building reports. If you miss the invitation to sign up when you register for your free account, you receive an email asking if you would like to register for the webinars. Webinars are held Tuesdays and Thursdays at 11:00 a.m. to 12 noon Pacific Time (U.S.). You may sign up over a year in advance. Tuesdays are the introduction; Thursdays are the Advanced training. The support website also includes live chat (24/7) as well as 11 video tutorials on various topics for those who cannot or prefer not to participate in the webinars.
As a security feature, QuestionPro generates and emails a password to the user upon registration to guard against using another's email to create an account.

eSurveysPro (http://esurveyspro.com/Prices.aspx) is based in Bucharest, Romania.
This tool is more liberal than most in offering unlimited questions and surveys to their free account holders. A paid subscription is, however, needed for ad-free surveys and data export. As do many, this tool includes online polls as well as surveys. It has an attractive user interface, but help seems a little harder to find than on some other survey tool sites.

FreeOnlineSurveys.com (http://www.freeonlinesurveys.com/) is based in Cornwall, UK. Although this is one of the most limited free version tools in terms of restrictions, FreeOnlineSurveys does offer some key features in the free version that are rarely found in other free tools. For example, charts are available in a variety of save-able formats with an astounding variety of chart types to chose from, as well as options to view, save as an image, save for PowerPoint, or save as PDF. The downside is that this data is only available for viewing for 10 days for any single survey unless you upgrade. Response data for each new survey created is available for ten days only.

A chart comparing the selected features mentioned above across these five tools in free versions (as of 10/12/10) is appended to this paper; access from the IAMSLIC website.

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