The primary purpose of this literature review series is to determine how, exactly, the ConQIR consortium can collect information needed for program maintenance from start to finish. Given the goals of the ConQIR Consortium, it becomes important to consider how this information can be collected in a way that preserves the quality of the information, makes it appropriately detailed and useful, and preserves the integrity of those from whom the information came. Additionally, the methods selected for the ConQIR Consortium demand a usefulness and practicality. It is for this reason the first methodological exploration in this series of literature reviews involves a mechanism known as the survey. Surveys, simply defined, are series of questions used to gain information (Ary, Jacobs, & Razavieh, 2002; Fowler, 2002; Jobe & Mingay, 1991). Surveys appear frequently in the lives of people as they read magazines, surf the internet, or sometimes through phone or mail solicitation (Fowler, 2002). People are familiar with survey mechanisms, and this makes them an easy research method to administer (Baxter & Babbie, 2004; Fraenkel & Wallen, 2006). The utility of a given survey largely depends on the questions asked and how they are asked (Esposito & Rothgeb, 1997; Oksenberg, Cannell, & Kalton, 1991). This literature review, then, will begin by describing a broad overview of surveys including why surveys are typically used to collect information. After the purpose of surveys is reviewed, practical considerations of constructing surveys are described. This includes discussion of open and closed questions and why each may or many not be appropriate in a surveying situation (as well as considerations of what data analysis for each kind of survey entails). Overall, this review offers the first step in considering how valuable information can be collected for the ConQIR Consortium.

An overview of surveys as a research method
The primary purpose of surveys is to describe the self-reported characteristics of a population (Baxter & Babbie, 2004; Fraenkel & Wallen, 2006). Surveys usually fall into one of two major categories (Fraenkel & Wallen, 2006). The first of these is the cross-sectional survey. A cross-sectional survey collects information from a sample that has been drawn from a predetermined population and is collected at just one point in time (Dillman, 2000; Groves, Cialdini, & Couper, 1992). These surveys are ideal for information that is to be used for a current project or to reflect current public opinion. Examples include political polls on how people plan to vote or surveys asking a customer to rate his or her satisfaction with a sale transaction. These differ from longitudinal surveys where information is collected at different points in time in order to study changes over time (Billiet & Loosveldt, 1988; Groves, Cialdini, & Couper, 1992). Sometimes a series of cross-sectional surveys may be used to assess longitudinal implications, but statistical measures must be considered in these situations (Arleck & Settle, 2004; Fraenkel & Wallen, 2004). Additionally, sometimes one survey will be administered and a brief period of time later the exact same survey will be administered to the same person (Fraenkel & Wallen, 2006). This usually does not constitute a longitudinal survey, but rather demonstrates a method often used to verify survey data (for more on this type of data safeguard, see the literature review on Re-Interview Design).

**Instrumentation**

The term *instrumentation* refers to the entire process of collecting data in a research investigation (Arleck & Settle, 2004). An important consideration in the choice of an instrument is validity: the extent to which results from it permit researchers to draw warranted conclusions about the characteristics of the individuals studied (Fraenkel & Wallen, 2006). A reliable instrument is one that gives consistent results (see the *Inter-Rater Reliability* literature review).
One major consideration in ensuring validity and reliability—other than the actual construction of the survey—is where the data will be collected, and if this place is appropriate in terms of offering privacy for participants allowing an honest report of information (Arleck & Settle, 2004; Foddy, 1993). This must also be considered for logistical reasons, as must when data will be collected, how often, and who will be collecting the information. The other literature reviews dedicated to research will continue to operationally explore how instrumentation issues come into the research process, particularly with survey interview methodologies. The rest of this literature review, however, will concentrate upon how to create a strong survey mechanism for extracting a desired set of data from a defined population.

**Conducting surveys**

If an organization or individual determines they wish to conduct a survey, many rigid procedures must be followed in order to ensure the validity and reliability of the survey (de Leeuw & van der Zouwen, 1988; Foddy, 1993; Fraenkel & Wallen, 2006; Singleton & Straits, 2002). This includes conducting an appropriate probability sampling procedure (see the Sampling literature review); standardized measurement, meaning the probability sample comes from the entire population for which the survey will make claims; and ensuring the survey questions are unbiased and measure what is claiming to be represented in the survey results (Foddy, 1993). To begin this process, it is important to first define the problem the survey seeks to solve (Fraenkel & Wallen, 2006). This may be confusing for those new at constructing surveys, as oftentimes the information being sought through a survey is not naturally seen as a problem. For this research method, then, the research designer must problematize the issue the survey covers by turning it into a question. For instance, if a political advisor wanted to know if her candidate was going to win the election, she might create the question, “Who will vote for
my candidate?” The problem this question inherently represents, then, is that the campaign manager does not know how likely her candidate is to win. By asking the question, she in turn solves her problem.

After defining the problem and posing a question, the survey administrator needs to identify the target population to who this question would be asked (Baxter & Babbie, 2004; Fraenkel & Wallen, 2006). In order to do this, the survey administrator must take into account everyone who could possibly be represented by the survey; and must not include anyone who could not be affected by the survey (Foddy, 1993). In the political advisor example, those who are not registered to vote would be discounted because they could not vote for the candidate even if they wanted to – so, in order to keep her survey sound, she would only include those who were registered to vote. She would also only ask those in the voting district where the candidate would be on the ballot. She would have to continue thinking of people who should be included and excluded until the list is exhausted. After the target population has been identified, the mode of data collection is considered (Briggs, 1986; Fowler, 1995; Lavrakas, 1993; Shuy, 2002; Weinberg, 1983). This largely depends upon financial resources, human resources, time frame, accessibility, and other issues that can act as catalysts or deterrents to collecting survey responses (Arleck & Settle, 2004; Fowler, 2002; Singleton & Straits, 2002). Approaches include convenience samples where the group being surveyed is all in one location at one time and the survey administrator can approach the group (although these situations are highly rare) (Baxter & Babbie, 2004), mail administration, telephone interviewing, and face-to-face interviews (see the Interview/Re-Interview literature review for more details on administration). Finally, the sample will be selected (Arleck & Settle, 2004). The sample must be methodically chosen using specific techniques (these are addressed in the Sampling literature review later in this series).
Developing the survey questions

The next general step in preparing for a survey is to prepare the actual survey instrument – or, simply put, to compile the questions that will be asked in the survey (Foddy, 1993, 2002; Schuman & Presser, 1981). Sometimes one question will answer everything that needs to be answered for a survey, but most surveys contain many questions aimed at answering the overarching question or problem (Singleton & Straits, 2002). Fraenkel & Wallen (2006) offer a chart exploring the types of surveys that can be conducted. These are presented here for consideration:

- **Questionnaires.** In a questionnaire, the subjects respond to the questions by writing or, more commonly, by marking an answer sheet.

- **Self-Checklists.** A self-checklist is a list of several characteristics or activities presented to the subjects of a study. The individuals are asked to study the list and then place a mark opposite the characteristics they possess or the activities in which they have engaged for a particular length of time.

- **Attitude Scales.** The basic assumption that underlies all attitude scales is that it is possible to discover attitudes by asking individuals to respond to a series of statements of preference. Words and numbers are placed on a continuum and the subjects circle the word or number that best represents how they feel about the topics included in the questions or statements in the scale.

After exploring the options available, the researcher should make every question fit the criteria listed above. Finally, before composing questions the researcher should consider what are the various variables in the overarching research question he or she is trying to answer (Fraenkel &
Wallen, 2006). For instance, if the overarching research question is, “How do people feel about the new menu at Wilson’s Family Restaurant?” then a variety of variables could be considered in the question. One variable, for example, is people. The researcher probably will want to know what kind of people feel a certain way about the menu. Small children or senior citizens whose meals cost less money may not be as important to the survey designer, and the researcher may be interested specifically if families enjoy the new menu. With those things in mind, the variable of people can lead to some specific types of questions being asked. Other variables that could be considered (but do not have to be – only those relevant to what the researcher wants to know have to be fully considered) include feel (happy, satisfied, fair, etc.), new menu (versus old menu, specific products, etc.), or Wilson’s Family Restaurant (recognition, association, awareness of community involvement, etc.). In order to keep variables in line, a clear definition should be provided for each variable. Also, when constructing questions each question should correspond to one (and only one) variable (Arleck & Settle, 2004; Singleton & Straits, 2002). Once variables have been assessed and defined, it will be clearer what sorts of questions should be asked (Fraenkel & Wallen, 2006).

Of course, it may not always be necessary for the researcher to develop his or her own questions. Reviewing other surveys, particularly surveys exploring variables of interest, can provide ideas or actual complete surveys for the researcher to appropriate for his or her study (Fowler, 1995, 2002; Oksenberg, Cannell, & Kalton, 1991). Questions should generally follow a similar format in a survey (Fraenkel & Wallen, 2006; Singleton & Straits, 2002). Although it is sometimes appropriate to mix multiple-choice, true-false, matching, rating, and open-ended items, doing so complicates scoring and is usually undesirable (Fowler, 2002). This is not to suggest that similar closed-ended questions cannot have an open-ended follow up. If a researcher
asks, “Is your date of birth before August 1, 2000?” then a space on the survey asking for specific birth date could be collected (Cresswell, 2003). This is especially helpful in fleshing out data while keeping it simple enough to test inter-rater reliability (Cresswell, 2003; Keyton, et al, 2004).

In composing questions for a survey, the first main consideration in question writing is creating questions that can be answered as written (Foddy, 1993). That is, the question should be specifically tailored toward the type of answers being sought. If the survey is set up for a simple YES or NO response, then a question such as, “Do you enjoy movies or do you think they are a waste of money?” would not work since a yes or no response to that questions would be ambiguous. Second, the question being asked should mean the same thing to everyone who will be taking the survey (Foddy, 1993; Schuman & Presser, 1981). In revisiting the question offered above, not everyone may interpret the question in the same way when it asks about whether movies “are a waste of money.” Some may interpret the question to mean the complete movie going experience including ticket prices, refreshments, parking fees, or any other costs are part of the equation. Others might interpret the question getting at whether movies are a waste of money in only in considering the actual price of admission. Researchers designing surveys should consider alternate readings of the questions, decide if they will affect the answers provided, and adjust questions as necessary.

Next the researcher should consider whether or not the questions being posed can be answered by all taking the survey (Fraenkel & Wallen, 2006). For instance, if the question, “How did you feel when you learned there was no Santa Claus?” was being asked of participants, the assumption embedded in that question is that every person taking the survey believed in Santa Claus at one time and has since learned there is no Santa Claus. If the
researcher is sure of this, then the question is appropriate; if not, participants may be given a lead question to determine whether they answer the next question (in this case, the question might be preceded with, “Do you or have you believed in Santa Claus?” followed by answer choices with directions regarding which question to go to next based on the answer). This example segues into a final consideration of whether the questions are ethical and open (Briggs, 1986; Finkel, Guterbock, & Borg, 1991; Foddy, 1993; Weinberg, 1983). They should be ethical in the sense that answering the questions will not cause unreasonable stress upon the participants and the information used in a fair and respectful way; and they should be open in that the participants will feel comfortable answering the questions – and no misleading information should be given to coerce, cause fear, or cause guilt for not wanting to answer the questions (Fraenkel & Wallen, 2006). While all of the considerations offered in this section are valuable, perhaps the most valuable feedback is the feedback that will be gained by giving the survey to friends or family members who will test the instrument and see if they understand the survey’s construction (Fowler, 2002). This survey data must be discarded, however, even if the person taking the practice survey could be a part of the survey population (Holstein & Gubriem, 2002). After doing this, the researcher is ready to pilot the survey (see the Piloting literature review).

**Considering self-administered and interviewer-administered surveys**

Generally, the use of self-administered instruments differ from interviewer-administered instruments and is highly dependent upon the chosen survey research process (Fowler, 2002). Self-administered surveys are surveys the users take on their own—the researcher mails them to the respondent, the respondent picks the survey up for a location, or the respondent gets a hold of the survey in some other fashion—but an administrator is not present when the survey is administered (Baxter & Babbie, 2004; Fraenkel & Wallen, 2006). Advantages of self-
administered surveys include ease of presenting questions requiring visual aids; the ability to ask questions with long or complex response categories; ease in asking batteries of similar questions; and minimization of face-to-face sensitivity to answering uncomfortable or potentially embarrassing information (Fraenkel & Wallen, 2006; Fowler, 2002). In contrast, the disadvantages include the need for an especially careful questionnaire design; good reading and writing skills must be employed by respondents (and illiterate respondents are excluded from the sample, thus offering some bias); the interviewer is not present to exercise quality control with respect to the respondent answering all questions or meeting question objectives; and the respondent may not feel the same pressure to provide thorough and thoughtful answers when an administrator is not present (or may choose not to respond at all) (Fraenkel & Wallen, 2006; Fowler, 2002). Additionally, there is some risk that someone who was not intended to take the survey may answer the questions (Fowler, 2002).

Interview surveys offer other considerations in terms of advantages and disadvantages (Singleton & Straits, 2002). While these will be explored in-depth in the Interview/Re-Interview literature review, some of the basic tenets are considered here in order to provide a full understanding of the impact of surveys. First, in terms of advantages personal interviews are largely considered the most effective way of enlisting cooperation for most populations; allow the interviewer administration abilities such as answering respondent questions, probing for adequate answers, and accurately following complex instructions or sequences; multi-method data collection including observations, visual cues, and ethnographic inquiry are possible; rapport and confidence building are enhanced, especially when dealing with sensitive material; and longer surveys often seem more bearable for participants (Fowler, 2002; Singleton & Straits, 2002). Disadvantages include the high cost of administering interview surveys; locating a staff to
conduct interviews can be difficult, especially in consideration of geographic location; administration generally takes longer; and some samples are more accessible through other survey methods (Fowler, 2002; Singleton & Straits, 2002).

**Overview of survey and interview options**

<table>
<thead>
<tr>
<th></th>
<th>Direct Administration</th>
<th>Telephone</th>
<th>Mail</th>
<th>Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparative cost</td>
<td>Lowest</td>
<td>Intermediate</td>
<td>Intermediate</td>
<td>High</td>
</tr>
<tr>
<td>Facilities needed?</td>
<td>Yes</td>
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<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Require training or questioner?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Data-collection time</td>
<td>Shortest</td>
<td>Short</td>
<td>Longer</td>
<td>Longest</td>
</tr>
<tr>
<td>Response rate</td>
<td>Very high</td>
<td>Good</td>
<td>Poorest</td>
<td>Very high</td>
</tr>
<tr>
<td>Group administration possible?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Allow for random sampling?</td>
<td>Possibly</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Require literate sample?</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Permit follow-up questions?</td>
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<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Encourage response to sensitive topics?</td>
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<td>Somewhat</td>
<td>Best</td>
<td>Weak</td>
</tr>
<tr>
<td>Standardization of responses</td>
<td>Easy</td>
<td>Somewhat</td>
<td>Easy</td>
<td>Hardest</td>
</tr>
</tbody>
</table>

**Final considerations for survey administration**

Those constructing surveys should look at the final project and feel comfortable in some other elements that, while can be considered in survey design, may not be fully evident until the final draft of the survey is composed (Baxter & Babbie, 2004). For example, a self-administered questionnaire mainly should be self-explanatory (Arleck & Settle, 2004; Fowler, 1995). Reading instructions should not be necessary, because they will not necessarily be read consistently. Second, and in line with this, the survey should be clearly put together in that looking at it the
questions are clean and easy to answer and the answering symbols (checking a box, clicking a response, circling a number) are easy to match up to the respective question (Fraenkel & Wallen, 2006). Finally, in mixing up questions when creating a survey, sometimes questions have the unfortunate instance of being placed next to another question that may make the meaning of one of the questions appear to be different than if it were placed next to another question (Fowler, 1995). By reading through the survey one question at a time, this can be considered before it goes to the pilot population. If these steps are followed, the proceeding steps (all outlined in this literature review) should be able to be followed with ease and produce reliable and valid research data.
References


