Chapter 8
Web–Based Data Collection for Educational Research

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ABSTRACT
Web-based surveys and web-based interviews are useful techniques to collect data through the web in educational research. In addition, web activities such as blogging, searching, and web mining have become quite convenient to collect and extract data from the web for research purposes. The purposes of this chapter are to describe and discuss techniques and tools for collecting and extracting data from the web for educational research purposes. First, a survey and a web-based or online survey are described and explained with examples. Second, web-based or online interviews, which are often similar to the face-to-face interview protocols are discussed and exemplified. After presenting the synchronous and asynchronous online interview tools, the selection criteria of the online interviewing tools are discussed. Lastly, this chapter describes and discusses web activities such as blogging, searching, and web mining to collect and extract data from the web.

INTRODUCTION
Nowadays, various techniques and technologies for collecting and extracting data from the Web are available to be used in many areas; and academic and educational environments are not exceptions. Particularly, Web-based Surveys and Web or online interviews are becoming very common and useful
techniques to collect data through the Web in educational research (Sun & Song, 2004; Vadi, Malkin, Lenart, Stier, Gatling & Applegate II, 2016) although they have traditionally been used in marketing research (Bakla, Çekiç, & Kösals, 2013). In comparison to conventional surveys (e.g., paper, mail, phone-based), Web-based surveys may have time, effort and cost-saving advantages because Web-based forms streamline the data collection process, formatting and entering responses directly into a database for analysis (Bech & Kristensen, 2009; Denscombe, 2006, Wright, 2005; Solomon, 2001). In addition, Web activities such as blogging, searching, and Web data mining have become quite convenient to collect and extract data from the Web for research purposes. The purposes of this chapter are to describe and discuss techniques and tools for collecting and extracting data from the Web for educational research purposes. First, a survey and a Web-based or online survey are described and explained with examples. These illustrated examples specifically focus on how web-based surveys are created as Web forms with a database to store answers or data, and how the stored data are transferred to a statistical software to conduct analysis.

Second, Web-based interviews, which are often similar to face-to-face interview protocols, are discussed and exemplified. In these web-based interviews, the researchers typically ask respondents to explain their experiences, what they think, or how they feel about a phenomenon. The tools and techniques for web-based interviews are categorized into two categories as synchronous online interviews that happen in real time (e.g., online chat) and asynchronous online interviews conducted in non-real time (e.g., e-mail interviews). After presenting the examples regarding synchronous and asynchronous interaction tools for online interviewing, the issues involved in selection of information and communication technology for an online interview are discussed.

Third, this chapter describes and discusses Web activities such as blogging, searching, and Web mining to collect and extract data from the Web. A blog is an online journal or informational website displaying information in reverse chronological order. Blogging provides an easy way to keep readers up-to-date on events, let them know about updated and useful information, and provide tips and opinions on various issues (Sim, & Hew, 2010). Blogs that are written by reliable bloggers can be very convenient tools for readers and researchers in many fields, including education (Sim, & Hew, 2010; Tekinarslan, 2008). Moreover, searching with a specific keyword or hashtag (#) on social media sites (e.g., Facebook, Twitter, Instagram) and other platforms which include user-created content (e.g., Blogs, Forums) provide researchers with an invaluable data on usage patterns of these platforms. The process for searching and gathering data from these platforms are explained. Finally, Web mining, a type of data mining concentrating on the Web as the primary data source, is described with its subcategories – Web content mining, Web structure mining and Web usage mining (Berendt, Hotho, & Stumme, 2002; Liu, 2007).

WEB-BASED SURVEYS

A survey can be described as a system for collecting data or information (Sue, & Ritter, 2012). According to the related literature (Fowler, 2002; Sue, & Ritter, 2012), instead of only focusing on questionnaires, taking a view of the entire survey process is important and critical to the success of a research project. The basic steps to be taken are the same in all kinds of survey processes such as paper-based or Web-based surveys (Sue, & Ritter, 2012). Specifically, the survey process starts with a description of the objectives or goals of the study. Then, the process continues with a literature review and consultation with experts. After that, investigators may choose to conduct a preliminary study such as focus group discussions or
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