

Print and Electronic Source Selection by Distance Education Graduate Students  
in Completing a Research Paper:  
An Exploratory Study

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## **Introduction**

The explosive growth of distance education within the last decade has created an increased awareness of the ways in which distance education students (heretofore referred to as “distance students”) complete class assignments. Because these students “attend” classes in a virtual environment, their access to and use of information sources often differs from students who attend classes exclusively on campus, i.e. those students who are in the physical presence of their professors and classmates while receiving classroom instruction.

The United States Distance Learning Association (USDLA) (2006) defines distance education as “the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance.” This definition of distance education signifies distance students’ physical separation from classrooms, instructors, and classmates; consequently, questions arise about the nature of distance students’ patterns of information usage, the information sources they select to complete class assignments, and the motivating factors that underlie source selection.

Although distance students typically are required to complete the same types of assignments (e.g., research papers) as their on-campus peers, distance students’ physical separation from the campus environment suggests that their motivations for selecting sources for assignment completion might differ from those of on-campus students (e.g., on-campus students typically have more immediate access to books in the library). While a few studies have investigated information source selection of distance students and the motivating factors for source selection, “source” in these studies generally is defined as a physical place (e.g., the library), which creates difficulty in conceptualizing actual

sources (i.e., physical objects) used by distance students for assignment completion. Therefore, this study seeks to identify and clearly define information sources used by distance graduate students to complete a research paper in order to better understand the characteristics of those sources that motivate their selection for use.

### **Related Literature**

Much of the existing literature on information source selection (e.g., the Internet) and motivation for selection in academic environments focuses on on-campus students, although some investigation has been done into distance students' information source selection as well. For example, a survey of 2,054 undergraduate and graduate students conducted by the Pew Internet and American Life Project (Jones, 2002) revealed that 73% of college students use the Internet as their primary source of academic-related information. A study that examined patterns of source selection among 225 college-aged student researchers found that 52% of students used library and Internet sources for research assignments (Burton & Chadwick, 2000). Similarly, an Online Computer Library Center (OCLC) study on information habits of college students reports that of 1,050 students surveyed, 78% accessed library Web sites on a regular basis when completing class assignments (Moyo & Cahoy, 2003).

In their examination of distance education students' Internet and library use patterns, Kelley and Orr (2003) found that 69% of graduate students use library databases frequently, while 71% of graduate students use the World Wide Web frequently. Liu and Zheng (2004) report that distance graduate students turn to the Internet more than any other source, although the study focused primarily on the factors that influenced the

library use of distance students. Meanwhile, motivation for source use has also received some of investigation. Burton and Chadwick (2000) found that students are motivated to select sources (both print and electronic) for a variety of reasons; accessibility was the primary motivator. However, it should be noted that of 543 participants, 93% (n=503) were undergraduate students who were fulfilling assignment requirements; as the authors note, undergraduate students “do not have the personal investment in their topic . . . that a professional [or graduate student] in the field would have” (Burton & Chadwick, 2000). This is an important distinction, given that the present study focuses on graduate, and not undergraduate, distance students.

While previous studies provide valuable insight into the variables (e.g., motivations) associated with information source selection by college students when completing class assignments, most studies focus on college students who attend class on campus (i.e., receive in-person from professors in the presence of classmates). Moreover, the results of existing surveys often are an aggregate of responses given by both undergraduate and graduate students, while the research on information source selection by distance students, and particularly those at the graduate level, is relatively sparse. Additionally, the term “source” typically is not clearly defined in the existent research, which creates difficulty in grasping the full dimension of print and electronic source selection by students. Finally, many studies are grounded in theoretical frameworks that address individuals’ patterns of information source selection but do not focus on the characteristics of the sources themselves that might indicate motivation for their selection. Therefore, actual print and electronic sources (as information objects) selected by distance graduate

students in completing a research paper, as well as the characteristics of those sources that motivate selection, warrants further exploration.

### **Theoretical Framework**

Previous research of college students' selection of information sources has been grounded in various theoretical frameworks (e.g., the principle of least effort). Although these frameworks have provided a solid theoretical grounding for the studies, little attention has been given to motivation for information source selection according to particular characteristics of the sources themselves. Therefore, the research at hand is grounded in uses and gratifications theory, which functions as a useful framework for identifying print and electronic sources as objects with specific attributes that motivate their use.

Uses and gratifications has been identified as the dominant paradigm for explaining media exposure in the field of communication studies (LaRose, Mastro, & Eastin, 2001). Palmgreen, Wenner, and Rosengren (1985) point out that uses and gratifications theory considers individuals as active seekers of media; this seeking process is goal-oriented, and provides a means by individuals are able to gratify various media-oriented needs. A central phenomenon of the theory, known as gratifications sought (GS) and gratifications obtained (GO), is defined in the existing literature as motives for media consumption (i.e., GS) and perceived personal outcomes of gratifications sought (i.e., GO) (Katz, Blumler, & Gurevitch, 1974; Rubin, Palmgreen, & Sypher, 1994). Moreover, GS/GO is an iterative process whereby expectations about the outcomes of a media object (e.g., book) are determined or modified through observation of gratifications obtained from the

object; these outcomes feed back into gratifications sought through future exposure to the object (Klapper, 1963; Palmgreen et al., 1985). Thus, individuals' initial interaction with a media object often determines future use of that object.

A concept central to GS/GO is expectancy value. Expectancy value has been widely used in uses and gratifications studies; the concept focuses on individuals' expectations of a media object based on some attribute or attributes of that object (Palmgreen, 1984). Moreover, because individuals are considered to be actively involved in the process of seeking media objects, individuals' expectations about the characteristics of those objects is essential to uses and gratifications theory, since individuals must select from alternatives that will meet their needs (Palmgreen, 1984). Accordingly, expectations about and evaluations of the attributes of a media object are important antecedents of motives to seek associated gratifications (Palmgreen & Rayburn, 1982).

The concept of expectancy value was first proposed by Fishbein (Palmgreen & Rayburn, 1982). According to Fishbein, an individual's attitude toward an object is a function of his beliefs (or expectations) about that object and the evaluative aspect of those beliefs (1963). The theory is stated in-depth as follows:

- 1) An individual holds many beliefs about any given object, i.e. many different characteristics, attributes, values, goals, and objects are positively or negatively associated with a given object; 2) associated with each of these "related objects" is a mediating evaluative response, i.e. an attitude; 3) these evaluative responses summate; 4) through the mediation process, the summated evaluative response is associated with the

attitude object, and thus 5) on future occasions the attitude object will elicit this summated evaluative response, i.e. this attitude (Fishbein, 1963).

According to Palmgreen and Rayburn (1982), Fishbein's theory is the most prominent and clarified of the expectancy-value theories; its information-processing assumptions are clearly aligned with those of uses and gratifications theory, and thus is the most effective approach to uses and gratifications phenomena (Fishbein & Rayburn, 1982).

Although the expectancy-value approach has received differing emphases in various studies, the research on expectancy-value collectively views attitudes as a function of expectancy (i.e., belief), or the probability that an object possesses a certain attribute; and evaluation, or the degree of positive or negative affect toward an object attribute (Palmgreen, 1984). Therefore, belief formation is a key component of expectancy-value theory, since beliefs about a source typically are informational components that determine the seeking of gratifications (Palmgreen & Rayburn, 1982). Fishbein and Azjen (1975) identified three categories of belief; among them are descriptive beliefs about an object, which result from direct observation of that object, and which lead to the formation, modification, and determination of beliefs concerning attributes of the object.

In sum, uses and gratifications theory, mediated by an expectancy-value approach, is an effective framework in which to identify print and electronic sources and the attributes of those sources that motivate distance graduate students to use them in completing a research paper.

## **Terms and Definitions**

The word “source,” as it is used in this study, is difficult to define both as a concept and as an object, given the variability of its definition in the existing literature. Therefore, the term is defined solely within the confines of this study; it is parsed into two types (i.e., print and electronic). Alternatively, operational definitions of the remaining terms are well-grounded in the literature and therefore are presented as such in this study.

- print source: a “print source” is defined as a physical object containing printed matter that bears information typically used in academic research; these are books, journal articles, newspapers, theses, dissertations, proceedings, white papers, and technical reports
- electronic source: an “electronic source” is defined as a virtual pathway that provides access to a print source typically used in academic research; these are databases, World Wide Web (or Web) sites, and the Internet
- belief: a “belief” is operationalized as the probability that an object is associated with other objects, concepts, values, or goals (Fishbein, 1963)
- evaluation: an “evaluation” is operationalized as the degree of positive or negative affect toward an attribute of an object (Palmgreen & Rayburn, 1982)

## **Research Questions**

This study will identify print and electronic source selection of distance graduate students when completing a research paper. In addition, the study will explore the characteristics of print and electronic sources that motivate their selection by distance

graduate students in completing a research paper. Therefore, the following research questions are proposed:

RQ1: Which print sources do distance graduate students use to complete a research paper?

RQ2: Which electronic sources do distance graduate students use to complete a research paper?

RQ3: What are the characteristics of a print source that motivate a distance graduate student to select it to complete a research paper?

RQ4: What are the characteristics of an electronic source that motivate a distance graduate student to select it to complete a research paper?

RQ5: In what order of importance are print and electronic sources ranked by distance graduate students?

RQ6: What are the similarities and differences of the motivations for print and electronic source selection among the three groups of distance graduate students being studied (i.e., those enrolled in Agricultural and Extension Education, Engineering, and Information Sciences)?

## **Methodology**

### **Participants:**

The University of Tennessee supports three distance education programs (i.e., Agricultural and Extension Education, Engineering, and Information Sciences) that permit graduate distance students to receive Master's degrees. Currently, 115 graduate students are enrolled in the distance component of Information Sciences; enrollment

figures for the remaining two programs have yet to be determined. Nonetheless, all Master's degree-seeking distance students at The University of Tennessee are targeted for participation in the study.

#### Method and design:

This study will use a survey to collect data about the information source selection of distance graduate students and the characteristics of those sources that motivate their selection for use in completing a research paper. The survey will be pilot-tested using a questionnaire that will be distributed electronically to ten graduate distance students in each of the three distance education programs via a "snowball" technique (i.e., by word-of-mouth). The questionnaire will consist of questions adapted from the Liu and Yang study (2004) and modified according to two fifteen-item Likert-type GS/GO scales developed by Palmgreen, Wenner, and Rayburn (1984). The scales are internally consistent ( $\alpha = .83$  and  $.85$ , respectively) and have been used to test specific components of the expectancy-value model (Rubin, Palmgreen, & Sypher, 1994; Rubin et al. 1994).

The purpose of the questionnaire is three-fold. First, it will be used to derive a list of print and electronic sources used by distance graduate students in each of the three distance education programs at The University of Tennessee. The list of sources then will be presented in a survey that will be distributed to all participants. Next, the questionnaire will identify the expectancy-value (i.e., beliefs and evaluations) of sources, which also will be distributed in a survey to all participants. Finally, the pilot test will confirm the reliability of the scales used for the research at hand.

Students who participate in the pilot test will be asked to note questions that are vague or ambiguous; a space will be provided on the survey for students to place such notations so that appropriate corrections can be made by the researcher. To ensure that the pilot-test participants do not participate in the resultant survey, only those who are expected to graduate in the Spring 2007 semester will be selected to participate in the pilot study.

Pilot testing is used to modify or refine the questionnaire design and identify errors that might inhibit data collection (Reynolds, Diamantopoulos, & Schlegelmilch, 1993). Thus, once the scales have been modified, the researcher will distribute a survey to graduate distance students enrolled in one of three distance education programs at The University of Tennessee: Agricultural and Extension Education, Engineering, and Information Sciences. The survey will be distributed via each department's electronic listserv. Participants will be given ample opportunity to complete the survey. An incentive for participation will be offered.

#### Limitations:

This study is limited to graduate distance students seeking Master's degrees in one of three distance education programs offered at The University of Tennessee. Other limitations that are not readily evident will be reported once survey data has been collected.

#### Method of Inquiry:

The expectancy value of print sources and electronic sources will be measured according to the general information-seeking and decisional utility facets of the GS/GO

scales. These two categories of the GS/GO scales are broadly supported by a “general surveillance” dimension, or information seeking by large numbers of people based on choices of medium alternatives (Rubin et al. 1994; Palmgreen et al., 1980), and by the suggestion that information is attended to by individuals if they believe that it will be useful (Palmgreen et al. 1980). Data also will be collected on age and gender of the participants.

### **Planned Statistical Analysis**

Resultant data will be analyzed descriptively, since the survey method often results in descriptive statistical data (Wang, 1999). Thus, analyses will be made of the mean source selection, both as a program-specific (e.g., Information Sciences) mean and as an aggregate mean among the three groups of participants. Additionally, motivations for source selection will be factor analyzed in order to identify and analyze the relationship between beliefs and evaluation of print and electronic sources.

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