The Impact of Social Marketing Strategies on the Information Seeking Behaviors of College Students

Effects of social marketing strategies on student research behaviors were investigated. Three objectives were identified as target behaviors for change: (1) decrease procrastination due to the illusion of immediacy, (2) increase students' willingness to seek expert assistance when it is warranted, and (3) increase the selection of information sources based on criteria other than the information need itself, which includes the habituated and automatic use of Internet sources based on the assumption that they are more convenient, reliable, and easy to use. Findings suggest a positive impact as a result of marketing strategies attempting to achieve these objectives. Students who received messages based on a social marketing framework that emphasized these objectives appeared more willing to engage in discussions about the research process and were more likely to seek assistance from a librarian. A number of students reported successful encounters with librarians in meeting their research needs. Students who only received skills instruction reported attempting to use research tools like databases, but gave up in frustration. Due to relatively little research on how social marketing strategies can be used to change student research behaviors, more research is warranted to explore this connection. More investigation is also needed regarding how to help librarians learn how to package and deliver messages using a social marketing framework.

Cognitive ability is but one determinant of human behavior. If people's actions were determined by knowledge alone, changing behavior would be a relatively easy task. Good behaviors, such as maintaining a healthy weight through diet and exercise, would be ensured through the simple delivery of appropriate information. Likewise, good information literacy instruction would ensure effective information seeking behaviors. Research suggests, however, that just as obesity persists in the United States despite the efforts of public health educators, college students continue to engage in less than ideal information behaviors despite the substantial efforts of instructional librarians across the nation's colleges and universities.[1]

Since 1951, when Wiebe asked, "Can brotherhood be sold like soap?" professionals in nonprofit arenas have seriously considered how they might apply commercial marketing principles to effect behavioral change in their clients.[2] What has been since dubbed "social marketing" has met with success in addressing and improving numerous health and safety behaviors.[3] While there is a substantial body of literature on marketing information literacy services and programs, little research has

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been done heretofore on applying these concepts to the actual information behaviors of students. This study will compare the impact of two distinct approaches to library instruction aimed at improving the research behaviors of freshmen college students: one which is primarily cognitive in nature and aims to increase information seeking skills and the other which applies social marketing techniques to increase effective information seeking behaviors. As the first of its kind, this research is exploratory and expected to generate questions and hypotheses for further research in this area.

LITERATURE REVIEW

In order to change information seeking behavior of college students, one must first understand their current behaviors and motivations. Fortunately, several recent research studies provide an excellent foundation for this work. A review of this literature will be followed by a brief review of current instructional practice in academic libraries. Finally, a discussion of social marketing and a review of its literature will highlight how social marketing techniques are applied to noncommercial aims and how such an approach differs from cognitively oriented library instruction.

The Information Seeking Behaviors of College Students

Recent studies provide a surprisingly consistent picture of how college students identify, select, evaluate, and use information. Clearly, from findings across all studies, the majority of students do not practice the multi-source, diversified, high-information use strategies library and information professionals prescribe.[4] Rather, they apply a predictable and highly consistent strategy for finding information. Whether they seek information for their course work or to fulfill every-day life needs, students turned to a small set of common information resources, demonstrating "little inclination to vary the frequency or order of their use regardless of their information goals and despite the plethora of other online and in-person resources that were available to them."[5] De Rosa et al. also conclude that the "majority of college students are not making high use of the array of electronic resources libraries make available."[6] Although Dervin and Huber found greater impact of context on source selection, their study describes the same limited information repertoire, particularly for undergraduates.[7]

Information seeking research has generally found that most people prefer informal, personal forms of information to formal information and

that holds true for college students.[8] However, Dervin and Huber found that a preference for electronic information is fast approaching equal status among undergraduates.[9] Specifically, students prefer Internet search engines to other sources of information. While De Rosa et al indicate 89 percent of respondents reported beginning their search for information with an Internet search engine, Head and Eisenberg found students turn to Google (99 percent), Wikipedia (92 percent) and friends (85 percent) for everyday-life information and to course readings (97 percent) and Google (95 percent) for course-related research.[10] Other studies also confirm that Internet search engines are the go-to source for college students when they begin their research.[11] Furthermore, students rely primarily on the Internet to cross reference sources and verify the information they have gathered.[12]

Current research also provides critical insight into what motivates college students' seemingly intractable unacademic behavior.[13] Students value and select information for very different reasons than do librarians. What Head and Eisenberg call a "disconnect" is key to understanding student behavior and librarians' frustrations.[14] While librarians select information based on thoroughness, credibility, and authority, students value other attributes more: "brevity, consensus, and currency," according to Head and Eisenberg, and "familiarity, convenience and currency," according to Dervin and Huber.[15] Students have apparently absorbed the message that library resources are more trustworthy. When asked what types of sources are more reliable and accurate, 77 percent and 76 percent, respectively, of all student respondents identified library resources. But they rate Internet search engines more reliable (63 percent), cost-effective (71 percent), easy to use (87 percent), convenient (84 percent), and fast (90 percent).[16] When students rate how well information sources "fit" with their needs and lifestyles, 64 percent reported that Internet search engines are a perfect fit compared to 24 percent who felt that way about the library.[17] If students rate the Internet more highly on the criteria they value most, then it is perfectly rational for them to select it as their primary source of information.

The good news is that students do report knowing about scholarly research databases. De Rosa et al, Dervin and Huber, and Eisenberg and Head all found that a significant number of students have used a scholarly research database at least once in the past.[18] Yet students selected databases for reasons that are less than ideal, for example because they have a single search box or because they are already known.[19]

There are several consequences to students'

nearly exclusive reliance on electronic sources of information. First, students do report experiencing frustrations due to "information overload and the sense of being inundated by all the resources available to them."[20] This response to information overload, and other responses, has the possibility to be maladaptive.

One of them, escaping, is, by definition, dysfunctional.[21] Head and Eisenberg describe students as being driven by familiarity and habit, sticking with known resources. In doing so, college students are able to escape information environments that are unfamiliar to them; environments that present the possibility of failure.[22]

A second consequence is what Head and Eisenberg call the illusion of immediacy: that is, the illusion that appropriate information is always immediately available.[23] This misconception leads students to misjudge how much time they truly needed to complete course-related research assignments. So while fear of failure is still a significant reason for procrastination on research projects, many students (40 percent) now cite "juggling their needs to meet competing course demands from other classes" as a reason for delaying work.[24]

Finally, most students do not seek help with these issues in libraries or from librarians. Eight out of ten reported rarely, if ever, asking a librarian for help with course-related research. Most used very few of the resources or services available to them.[25] Only 12 percent had ever used online reference services or attended on-site library training sessions.[26] A full 39 percent of students indicate they use the library less now due to Internet use, and most (62 percent) indicated they expect their library use to remain flat or decline in the future.[27]

Research findings give some indication of why students tend to ignore these potential sources of help. Primarily, 70 percent of all college students still associate libraries first and foremost with books, while only 7 percent with information and 5 percent with research and 2 percent with reference services; though when asked to describe the main purpose of libraries, 49 percent used the word information in their answer.[28] Secondly, their experiences apparently reinforce their avoidance behaviors. When they did seek help, 52 percent of college students described the assistance they received from a search engine as equally helpful as assistance from a librarian. Only 32 percent thought it was better.[29] When asked if they had ever started with a search engine and ended up at and using the library's website, a full 76 percent of those students that answered yes reported that the library's site did not completely fill their information needs (66 percent partially and 10 percent not at all).[30]

Head and Eisenberg, in summary of their own findings, express well the general consensus of the literature:

> Students conceptualized research, especially tasks associated with seeking information, as a competency to be learned by rote, rather than as an opportunity to learn, develop, or expand upon an information-gathering strategy which leverages the wide range of resources available to them in a digital age.[31]

Information Literacy and Instruction

Generally speaking, the literature of information literacy emphasizes cognitive skill development. The most widely accepted articulation of information literacy, the learning outcomes described in professional documents from the Association of College and Research Libraries, heavily emphasize skill acquisition.[32] Notable exceptions, such as work by Kuhlthau and Bruce, attend to the affective dimensions of information behavior and provide a foundation for this work.[33] Kuhlthau's zones of intervention are particularly useful in helping understand how library and information professionals might better communicate with students during the various stages of their research.[34] Evidence that library instruction, as it is currently practiced, is having a substantial, macro-level impact on use behaviors is not overwhelming. Existing studies on instruction are rarely research based and, when they are, tend to rely on case-study methodologies.[35] That is not to say that traditional, skills-based instruction should be abandoned, but rather that much research is yet to be done. The findings on college students' current information seeking behaviors discussed above suggest that library and information science (LIS) professionals need to continue researching new strategies to address these issues.

Social Marketing

Social marketing is essentially the application of commercial marketing techniques to the resolution of social and health problems. Wiebe is generally credited for the development of social marketing after he evaluated four different social change campaigns, and concluded that the more similarities they had with commercial marketing, the more successful they were. Social marketing is unique in that it is solution focused and seeks to change behavior in specific and measurable ways. Essentially, it provides a mechanism for systematically understanding barriers to individual behavior

change and designing interventions accordingly.

The literature on social marketing is extensive. It has been applied primarily in public health and safety contexts to promote behaviors such as safe sex practices, family planning, smoking cessation, vaccinating children, drug and alcohol avoidance, and healthy diet and exercise. This literature is vast, and comprehensive reviews exist.[36] Overall these reviews conclude that social marketing interventions are effective:

> The main point is this: research illustrated that social marketing interventions of different types can be effective and that they can work with different target groups: young people, adults, minority ethnic and disadvantaged groups. Furthermore the results demonstrated that social marketing interventions can be effective in a range of different settings: schools, the workplace, church based, community and family-based settings, clinical practices, supermarkets and media-based settings amongst others. The reviews also produced evidence that both narrow and broad focus social marketing interventions can be effective. Overall the effectiveness reviews reported in this article identify social marketing as a very promising health behavior intervention approach.[37]

Social marketing methods have also been applied effectively in other areas, including education, so it seems likely to have a positive impact when applied to information behavior.[38]

The literature on social marketing within the LIS field is limited. Librarians have applied social marketing techniques to increase librarian-teacher collaboration, promote the use of archives, promote youth services and collections, and to reduce users' mistreatment of books.[39] The application of social marketing techniques is equally limited in the area of library instruction and user education. Much of it is confined to attracting students to user education programming.[40] Others fall into the "how-to" category but do not actually test methods for engaging in effective social media.[41] This study will pose important questions and add valuable knowledge about the application of social marketing techniques to information behavior to this still developing body of literature.

PROCEDURES

This quasi-experimental study compares two distinct interventions with college students to improve their information seeking behaviors.

Students were administered a preliminary survey to assess their current behaviors, two types of interventions were designed and delivered, and data were collected from student research journals and an instructional artifact, a works cited page, to compare the impact of each intervention. Students were assigned a number to maintain confidentiality. Multiple data sources ensured triangulation of data.

The process of constructing a social marketing campaign will be used as a framework to discuss the additional procedural details. That process has four major components: customer and competitor assessment, market segmentation, identification of target behaviors, and the design and delivery of an intervention intended to alter those behaviors.

Social Marketing Component 1: Customer and Competitor Assessment

The first step in a social marketing campaign is to thoroughly assess both customers and competitors. In noncommercial applications, this often refers to understanding what behaviors clients engage in that compete with more desirable behaviors. Existing literature, reviewed above, provides a thorough understanding of how college students, in general, seek information and why they are attracted to the Internet to fulfill so many of their needs. For this study, customer participants were drawn from three sections of the first of a two-sequence freshman composition course, all taught by the same instructor. Each of the three sections was randomly assigned to receive a traditional instructional treatment (hereafter called the Skills group), a social marketing treatment (hereafter called the Behavior group, or no treatment (hereafter called the Control group). A preliminary survey (see appendix A) was administered to assess the characteristics and entry behaviors of the particular student participants involved in this study prior to the treatment provision. It consisted of three demographic items and six open-ended questions intended to assess students' past research behaviors. Open-ended questions were used to avoid influencing students' descriptions of their previous activities. Surveys were coded by assigning numbers to specific answers that occurred frequently. For example, survey question five asks, "If you needed help with your research, would you ask for help? Where would you go to get it?" Answers varied, but most students used a combination of instructor, friend or family, a librarian, or the Internet. Possible answers were coded quantitatively and calculated into percentages. This method was used for each of the survey questions. Data were

calculated for each of the separate classes to determine if there were any significant differences in student research processes prior to intervention. No significant differences were identified.

Demographics and Entry Behaviors

Overall, the survey data demonstrated that the three groups were similar in makeup and behavior. All participants were over the age of eighteen, and nearly all were Caucasian, but the Behavior and Skills classes were populated predominantly by females (approximately two-thirds), while the control group was predominantly male in make-up (approximately two-thirds).Only four (8 percent) of the students in the study were not freshmen. Approximately 35 percent of the students in each group reported that they would begin their research one to two weeks prior to the due date. About 42 percent indicated they would begin research three to four weeks in advance. An average 65 percent of students in all groups reported they would search the Internet first for sources. However, when asked what types of sources they would seek, students in the control group indicated Internet sources more often (at 75 percent) than either the Behavior (at 45 percent) or the Skills (at 58 percent) classes. Students in the Behavior class were about 8 percent more likely than students in the Skills class and approximately 20 percent more likely than the control group to state that books and journals were also top choices.

In terms of help-seeking behaviors, the Behavior group was more than twice as likely to ask their teacher for assistance and only half as likely to ask a librarian as the Skills group, with the control group reporting frequencies in between the other two groups. This tendency may be related to the degree of comfort and experience each group reported searching library databases. Students in the Behavior group were far more likely to describe themselves as "very comfortable" (33 percent) than were students in the Skills group (7 percent) or the control group (17 percent). Conversely, the control group was four times more likely than the Behavior class and nearly twice as likely as the Skills class to report "never having used" library databases. Students in the Behavior group were also more than twice as likely as students in the other two groups to trust their gut (by relying on what "seems" true) to determine credibility.

These self-reported entry behaviors support much of the research findings discussed in the literature review and demonstrate the basic similarity of participants to the overall college student population. Taken together, these data provide the foundation for the next steps, which are determining market segmentation, identifying target behaviors, and designing message and delivery.

Social Marketing Component 2: Market Segmentation

The next step in a social marketing approach is market segmentation, which is the identification of a preliminary target audience. Breaking the target population into smaller homogenous groups allows interventions to be tailored to specific populations rather than to mass audiences. This method increases marketers' ability to appeal to individuals within groups. Researchers decided to target freshmen because they have had less time to become habituated in their research behaviors and may be more open to intervention than more experienced students. The three sections of the first of a two-sequence freshman composition course, all taught by the same instructor, also offered an ideal setup for a quasi-experimental study. Each section was identical in instructor, content, and assignments. As the preliminary survey data suggested, students were also very similar across sections in terms of demographics, such as age, ethnicity, and cultural background. This homogeneity across sections not only allowed for well-tailored interventions to be designed, it also provided a particularly valuable opportunity for researchers to control for the impact of variations in instructor, content, and student population. The three course sections were randomly assigned to receive the Skills intervention, the Behavior intervention or no intervention (the control group). The distinctions between these interventions are explained in the following narrative, but are also summarized in appendixes B and C.

The study was conducted during a six-week period during which students were assigned a ten page research essay. The essay assignment required students to immerse themselves in a community to which he or she had not previously belonged. Students were required to engage in fieldwork and conduct interviews, as well as perform research on their group using secondary sources. The instructor required at least six sources for the works cited page.

Students were offered extra credit points by their instructor to complete the survey and keep a weekly journal of their research process. Data were used only from students who also granted consent to allow their survey, journal, and works cited page from their final essay to be used for research purposes. The response rate varied widely by group and will be discussed later in this article.

Social Marketing Component 3: Identifying Target Behaviors

The next step is to identify specific behaviors targeted for change. Based on data gathered from the literature and preliminary survey, researchers isolated three undesirable behaviors that pose critical barriers to the effective information seeking behaviors of this group of college freshmen:

- Objective 1: Decrease procrastination due to the illusion of immediacy
- Objective 2: Increase students' willingness to seek expert assistance when it is warranted
- Objective 3: Increase the selection of information sources based on criteria other than the information need itself, which includes the habituated and automatic use of Internet sources based on the assumption that they are more convenient, reliable and easy to use

While these are not the only information seeking behaviors of college students one might want to address, the scope of this study mandated focusing on a manageable and distinct set of variables to isolate and compare post–intervention.

Social Marketing Component 4: Intervention Design and Delivery

This study is designed to compare a traditional, instructional intervention with one based on social marketing principles. In both cases, the interventions were designed and delivered by the coauthors of this article, both of whom have extensive experience teaching information literacy skills in a classroom setting. As discussed previously, the third section of students, who did not receive any instruction, allowed researchers to control for change occurring naturally through maturation or other factors. To facilitate discussion, the first section of students will be referred to as the Skills class, while the second will be referred to as the Behavior class. Students in both sections of the course had received their essay assignment but had not yet started brainstorming for topics at the point of intervention.

The first intervention, called the Skills class, focused on teaching students how to search the library catalogs and research databases for the information they needed. The fifty-minute session included instruction on how to identify key terms and construct a search using Boolean operators, identify subject headings, evaluate search results, retrieve full text, and cite resources. A basic lecture format using a computer and projector screen was used because classroom availability prevented the use of a lab for hands-on learning. Researchers made a conscientious effort to engage students in active learning, however, by using students' topics and soliciting examples from them for searching demonstrations.

The second intervention was designed using social marketing principles. This design essentially involves applying the four elements of marketing (called the "Four Ps"), which are product, price, place, and promotion and creating a set of persuasive messages about each of them. Each P will be described briefly before analyzing how it was addressed by the content and used to target the undesirable behaviors of the study population. The fifty-minute session essentially involved the delivery of persuasive messages and included one participatory activity designed to both generate conversation about selecting sources and allow researchers to model the process of matching information to needs.

The first P is product. Product positioning determines how the target audience thinks about a product as compared to its competition. It aims to juxtapose one product to another as better in some explicit way. Product positioning is typically based either on the benefits of the product (this will do something good for you) or the removal of barriers (this is not difficult for you to do). There are several ways to achieve this: create a new product or redesign an existing product to be more attractive or accessible or emphasize the ways in which an existing product is more attractive or accessible than its competitor. Because researchers for this study have no control over the actual product, the third option is the focus of all messages constructed to address product in this study.

There are two distinct products addressed by this study. The first is library resources and services. Although this study is explicitly not about marketing library programs, students' willingness to see library resources and services as desirable undergirds the three behavioral objectives of this project. For example, one explicit objective was to increase students' willingness to ask for help. Messages crafted for this intervention might emphasize both the quality and the convenience of professional reference assistance. Because it's known from previous research that students value convenience over quality, that characteristic of reference services was emphasized, and quality was treated as a "by the way" add-on. So the message delivered was something like "You can chat online with a librarian as easily as you can chat with your friend. Or, if you prefer to talk to someone, you can call or make an appointment as easily as you

can arrange to meet a friend (and you'll find it so much more useful than talking to your friends, by the way.)" The same message was constructed to address the use of library resources: "They are as easy and convenient to use as Google if you just invest a small amount of learning, which will be addressed in the section discussing the second marketing element, price (and you will have access to a much better variety of sources than if you rely on the Internet alone, by the way)." Brief demonstrations of the accessibility of sources were used to clearly illustrate the veracity of these messages. Although this content and much of the other described in what follows is, in and of itself, not radically new to instructional content, the approach is unique because it moves these messages from the periphery to the center of library instruction.

The more important product promoted in the Behavior class was the new behavior researchers wanted students to adopt. As described earlier, the second product is behavior that includes allowing a reasonable amount of time to complete research, seeking help from an LIS professional when it is needed, and the selection of information sources based on appropriate selection criteria. Students must be convinced this new behavior is a good fit with their lifestyle and their self-perception. So, again, messages were constructed to persuade students that, once adopted, these behaviors would be as convenient, easy, and reliable as their current behaviors (and would produce much better results, by the way). Results were articulated in ways that have demonstrated importance to students, such as getting better grades and becoming more savvy consumers of information.

The second P is price, or the cost of changing behavior. For this element, the perceived benefits must outweigh the perceived costs. The price also must be perceived as something the target market is capable of paying. The content of the Behavior class focused on price in several distinct ways. First, messages were crafted to persuade students that the learning curve for finding and selecting the best information is not only worth it, but doable. The message on "worthwhileness" focused on investing a modest effort now, as freshmen, to adapt to college, just as is true with other elements of life, such as making new friends. Researchers emphasized the return on investment of these early efforts throughout the four years of college during which the necessity of research will be confronted many times: "One hour with a librarian will not only make your future projects easier, but they will also be better and more likely to produce good grades."

The other two approaches to price are related to the adoptability of the three target behaviors.

While ease of seeking help is a relatively simple concept to demonstrate, the other two behaviors required more creative messages. Because procrastination is particularly intractable, researchers opted to focus on time management both in and outside the classroom. In class, students were presented with a six-week plan for research, which mapped out the process and prescribed specific research goals for each week, including asking a librarian for help, searching databases, spending time on evaluation, and citing sources. Each student was given a calendar highlighting these targeted behaviors to take home. It also was reemphasized that reference assistance may speed up the process by helping students identify the best resources early on. Both these messages were reinforced through promotion outside the classroom, which will be further discussed in the promotion section.

The second approach to adoptability was to persuade students that they already possess many of the critical thinking skills they need to become good arbiters of their own information needs. A significant portion of class time focused on the process of assessing information needs and matching information to them. An activity was created that helped students discover that, with a reflective attitude, they are more than capable of being savvy information consumers. In class discussion, researchers tried to draw analogies to students' other decision-making activities, for example purchasing one brand over another or taking one class over another, to evoke the sense that selecting good information simply involves the application of existing skills to a new context.

For example, when one student was asked what type of information she would look for on her chosen community—skater punks—she proudly announced that she would use scholarly journals. A discussion ensued about likely venues for information on skater punks, and after some time, the student realized that the Internet would be an important source of information both from the community and about the community, which was an essential aspect of that assignment. In this fashion, students were encouraged to use critical thinking to come to their own conclusions about the value of information and the process of identifying and selecting it, which emphasized the voluntary aspect of changing behaviors.

The third P is place, which is when and where the target audience might have the right mindset to consider or try out the new behavior. This element was emphasized in two distinct ways: through the placement of the product and the placement of the message. In-class content demonstrated that library

resources, including help, are placed in convenient and easily accessible websites. "It's as easy to find as Google," was the message conveyed. The research calendar was used to focus student's attention on these important tools at precisely the time they would need them. This idea was reinforced through promotion throughout the six-week period.

The fourth P, promotion, is the stage that focuses on communicating to the audience about the other Ps. Messages should be memorable, connected to something the target market values, repeated, and delivered in an appropriate medium (one your audience uses). Researchers emphasized the importance of allowing time for each stage of the research process and illustrated how this produced better research and better essays. Images of a flea market and a department store were contrasted to illustrate visually the distinctions between the web and the library. Students were asked to look at the two images and decide which one they would use if they had to purchase a dress or suit quickly. Analogies were drawn to "shopping" for information in a place where everything is organized, of good quality, and staffed by well-trained consultants. To allow for repetition and consistency students were also e-mailed weekly reminders with easily accessible links to sources that would enable the behaviors targeted for that week. For example, in the first two weeks of the assignment, researchers e-mailed links to chat reference services, online sign up for individual consultations, and contact information for librarians to encourage and facilitate the targeted help-getting behavior.

E-mails were also designed to supplement and reinforce the marketing strategies used during the in-class session. They emphasized time management and the use of library reference services and online help pages to guide students toward credible sources. They actively placed the product (the new behavior) in a medium already close to students.

Although many of these messages are ones librarians may already deliver in their traditional instructional content, this approach is unique for strategically focusing on (1) what those messages should be (specifically given what we know about current behavior and given the specific behaviors targeted) and (2) when and how to deliver them. This approach is distinguished by making this process explicit, rather than implicit, and by making the resulting messages central, rather than incidental, to course content.

DATA SOURCES

Students were asked to maintain a journal (see appendix D) to record and describe their information

seeking behaviors during the six weeks they completed their assigned essay. Students were provided with paper copies of the journal, so that they could carry them to any research site. Each week, students were sent an e-mail reminding them to record research related activities. They were encouraged to think of research broadly, including activities such as chatting with someone about their topic. Each reminder e-mail also included a copy of the journal assignment in case students preferred completing them electronically.

Data coding for journals was similar to the process used for preliminary surveys. Researchers identified and counted any mention of the following six behaviors: visiting the library, talking with a librarian, using the library's catalog or databases, researching online, talking with friends or family about their topic, and completing fieldwork. The percentage of students who exhibited each behavior was calculated. Quantitative coding allowed researchers to more easily identify trends in the activities of individual students and across the study population. From the classes, 61 percent of the Behavior class and 13 percent of the Skills class submitted journals for analysis.

In addition to their journals, each participating student submitted their works cited page from their final essay. Participation in this phase of the study was fairly even across all three classes (see table 1). Because participation in the journal phase varied widely across classes, citation analysis provided more even analysis of the kinds of research students conducted. It also allowed for triangulation of findings for students who did provide their journals for analysis. Data from the works cited pages was compared to self-reported survey data, which allowed for weighing behavioral intent against actual behavior. It also helped identify overall trends in student source selection.

As with other data sources, works cited pages were analyzed quantitatively. Each citation was coded in one of the following categories: books, journal articles, news sources, websites, government documents, interviews, multi-media sources (mainly videos, television, and music sources), and unknown. While some citations fit into more than one category, researchers coded them using the most specific category possible. For example, if a website was a government site, it was coded as a government source. Most sources were easily identified and categorized. Each category was calculated to determine what percentage that category represented out of total sources used. Collecting data from multiple points in the process provided researchers with a vivid picture of students' information seeking attitudes and behaviors.

Table 1. Journal Data Analysis

Activities Mentioned in Journal Prompts	Behavior Class	Skills Class	Control Group	Average Rate
Student visited library	63.64%	50.00%	50.00%	58.82%
Student talked with librarian	18.18%	0.00%	0.00%	11.76%
Student used library catalog or databases	18.18%	100.00%	0.00%	23.53%
Student performed online research	90.91%	100.00%	100.00%	94.12%
Student talked with friends/family about topic	63.64%	50.00%	50.00%	58.82%
Student conducted fieldwork	100.00%	100.00%	100.00%	100.00%

Table 2. Participation Rates

Participation by Data Type	Behavior Class	Skills Class	Control Group
% of class who completed survey w/ completed permission form attached	86	68	86
% of study participants who also submitted journal entries	61	13	22
% of study participants who also submitted works cited pages	89	87	83
% of class who did not participate in any aspect of study	14	32	14

FINDINGS

The findings of this study suggest the social marketing approach was somewhat more successful at producing the desired behavioral changes for objectives one and two than the traditional, instructional method. However, the two interventions had an equal impact on objective three behaviors. Data on each of these objectives will be discussed in turn momentarily; however, one of the clearest differences in outcomes between the two interventions was surprising. The Behavior class was far more participatory throughout the process in terms of writing journal prompts and being willing to reflect on their research process (see table 1). Approximately 61 percent of the class participated in all three elements of the study, as opposed to 13 percent in the Skills class (see table 2). Although this willingness to engage in metacognition about the research process was not originally a targeted behavior, it is indeed a desirable outcome. Researchers hypothesize this more reflective attitude would lead to detectable behavioral change in all three goal areas given a longer post–intervention assessment period. This hypothesis should be tested through additional research.

On the other hand, uneven participation in journaling across the two groups makes comparisons of the two interventions using this data source less compelling. The following discussion of findings regarding each objective must be read with the caveat that researchers simply know more about the Behavior group than the Skills group in terms of process. Data on outcomes, garnered largely from the works cited pages, are nearly equal across the two groups and provide a more trustworthy comparison.

Objective One: Students in the Behavior class reported earlier and more persistent attempts at library research. One student wrote, "I went to William T. Young (UK library), but I honestly couldn't find books with information that I felt was useable in my paper. I also went to my library at home, the Washington-Centerville library. I got really good information from that library. I think it is because I am more familiar with that library and it's just a simple public library." Students in the Behavior class reported a 13 percent higher rate of going to the library during the six-week period.

Objective Two: Of those 63 percent of students in the Behavior class who went to the library, 18 percent also asked a librarian for assistance. This finding is particularly relevant given their survey responses prior to intervention. Students in the Behavior class were the least likely to say they would approach a librarian for help. Only 14 percent indicated they would seek a librarian's help as compared to 36 percent in the Skills class

Table 3. Works Cited Analysis

Behavior Class		Skills Class		Control Group	
Source Type	% of Total	Source Type	% of Total	Source Type	% of Total
Books	11.00	Books	9.00	Books	4.00
Journal Articles	8.00	Journal Articles	10.00	Journal Articles	2.00
News	3.00	News	2.00	News	4.00
Websites	55.00	Websites	42.00	Websites	63.00
Government	1.00	Government	5.00	Government	0.00
Interview	20.00	Interview	25.00	Interview	27.00
Unknown	2.00	Unknown	2.00	Unknown	0.00
Video/ Music	0.00	Video/ Music	6.00	Video/ Music	1.00%

and 24 percent in the Control class. This greater rate of change suggests that the social marketing approach is more effective at increasing students' willingness to seek professional assistance. Another student in the Behavior class signed up for a consultation with a librarian and said this of her experience: "From my talk with the librarian I was able to identify key search words and how to access library databases through the library page." This same student reported in a later journal entry that she had successfully found articles using library databases. This student was the only one who reported signing up for a consultation, which was heavily emphasized during the instruction period.

No students from the Skills class reported asking for help, although some of them did describe going to the library. Before her visit to the library, one student wrote, "I hope to gather up as much research as possible from the online resources from the library, and most likely make a trip there and get some help from a librarian (which I am somewhat terrified about!)" After her visit to the library, she stated, "A friend tried to explain to me something about InfoKat [the online catalog] and the number that it gives you on the Internet is where the book or article is located, but I was so confused that I just gave up." An interesting question for further research would be what factors intervene in students' intention to ask for help and their failure to do so. Another student from the Skills class, who did not mention going to the library, did try to use the online databases and the catalog but had no success with keywords in either tool. These students, who were taught searching strategies in the Skills class, may have benefitted from marketing strategies that encouraged them to seek help when they had difficulties searching. They were willing to attempt more difficult types

of research, but they did not internalize the message of how to solve problems by seeking help.

Although the social marketing approach was more effective than the traditional cognitive approach in increasing students' willingness to seek professional assistance, researchers acknowledge that the improvement was modest. Many students avoided contact with librarians. The preferred order of help is friends and family, instructor, and then nonhuman library sources. This was particularly true in the earliest stages, which is also consistent with Head and Eisenberg's findings.[42] According to journal data, many students mention talking to friends in the preliminary brainstorming stages, but no one describes consulting a librarian for this type of help. Further research is needed to determine the psychology behind this resilient behavior so that it can be targeted more effectively.

Objective Three: Both the Behavior class and the Skills class cited a combination of journal articles and books: 20 percent (Behavior) and 18 percent (Skills) of their total resources cited. The Control group cited books and journal articles as approximately 6 percent of the total resources cited. In general, the Control group used less credible resources (see table 3).

Interestingly, a larger number of students mentioned visiting the library, but their journal prompts and works cited pages indicate that they relied on Google more than on any other source. This suggests that while students may feel the library is useful as a physical place, they are not yet convinced of the value of the resources offered through the catalog and online databases. In addition, several students reported being comfortable using library databases in the preliminary survey, but they cited websites exclusively in their bibliographies. This may indicate that students found databases more difficult than they expected, or that

they simply prefer to use websites. Some students failed to consider unsuccessful endeavors as part of their research. A number of students indicated in the last week that earlier that month they had gone to the library, but they did not include that information in the journal entry for the earlier week, which may indicate that they have different definitions of what constitutes the research process, something researchers would be more explicit about discussing in future studies.

DISCUSSION

In response to the question, "Do social marketing techniques produce greater change in the information behaviors of college students than traditional cognitive-based approaches?" the answer generated by this research is mixed. While social marketing was moderately more effective at achieving objectives one and two, the procrastination and help-seeking behavioral objectives, it had no significant impact on information selection behavior. This study, as exploratory studies are apt to, may raise more questions than it answers. For example, what kinds of messages will it take to persuade students that library resources fit their use criteria and are worth the price? In terms of objective three, was it the social marketing approach that failed or were researchers simply better at delivering the traditional intervention? Like many librarians, both researchers were highly experienced at teaching library skills but much less so at using social marketing techniques to craft persuasive messages. Social marketing is a newer concept for librarians, and more research and training is needed to design effective marketing messages. Researchers acknowledge that as first time social marketers, they probably left room for improving the actual messages delivered and, perhaps, improving on the results found in this study.

Another question raised by this study is how long a period is necessary to achieve and detect behavioral change? Clearly, success changing deeply entrenched behaviors is often slow going. Had behaviors been remeasured after the six-week period covered by this study, would change have been more or less pronounced? Had the study included a greater number and variety of contexts (via multiple assignments) would greater or lesser distinctions between approaches been evident? Ideally, future studies would allow for analysis of behavioral change over a more substantial length of time and across multiple research activities.

Finally, more research is necessary to determine the impact of social marketing techniques on a larger sample of the population. This study should be replicated across multiple and diverse institutions with a much larger participant pool. A larger sample size would also allow researchers to add a combination group to the study, which would measure the effectiveness of applying both social marketing principles and skill-based instructional strategies to affect behavioral change. In addition, standardizing data collection tools would produce more reliable data and allow for the application of inferential statistical methods.

CONCLUSION

Despite its limitations, this study provides an important foundation for future inquiry into the application of social marketing techniques to the information behaviors of college students. Reaching outside one's discipline is difficult and requires the application of new theoretical frameworks to existing problems. Yet it is by rethinking standard approaches that LIS professionals may develop innovative strategies that supplement and improve upon current methods.

Because social marketing has proven itself an effective framework for intervention in the arenas of public health, safety, and education, information literacy librarians have every reason to hope for the same success in its application to information behavior. By generating questions and by illuminating the issues that should be addressed in future studies, this research adds valuable information to the knowledge base of instructional librarians and information professionals.

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APPENDIX A. STUDENT QUESTIONNAIRE

This survey is designed to give us an idea of your current and past research behaviors. *Answer honestly and be as specific as possible*. This survey is strictly voluntary. Your instructor will not grade your answers —you will just receive extra credit for your participation. Your survey responses will only be provided to researchers if you have consented to participate in the study.

1. Age: Are you 18 years of age or older? _____ Yes _____ No
2. Gender: _____ Male _____ Female
3. Year in School: _____ Freshman _____ Sophomore _____Junior _____ Senior
4. If you were assigned a ten page research paper with six weeks to complete, when would you begin researching for it?
5. If you needed help with your research, would you ask for help? Where would you go to get it?
6. As you began your research, how would you begin looking for sources? What kind of search would you perform? Be as specific as possible.
7. What types of sources are you most likely to look for first?
8. How would you decide if the sources you find are credible? What determines whether or not you trust a source?
9. How comfortable are you using the UK library databases? Do you feel like you could successfully find articles and books relating to your topic?

Other comments regarding the Research Process:

APPENDIX B. SKILLS GROUP

Content of Traditional Instructional Intervention

Time: Fifty-minute session

Method/Procedure	Objective
Discussion of comfort level with library skills (large group discussion)	To determine how much skills instruction students needed
Introduction to databases: Academic Search Premier and Business Source Premier (brief demo)	To familiarize students with the major databases they will most likely be using for their research
Searching sample topics using suggested student topics (demo and large group discussion)	To give specific examples of how to search topics, particularly those relating to their own research
Introduction to key words and subject headings (demo and large group discussion)	To teach students how to use the language of the database

Content of Social Marketing Intervention

Time: Fifty-minute session and follow-up emails

Method/Procedure	Objective	Correlating Marketing Strategy
Humorous video clip about procrastination (large group discussion)	To build rapport between students, their experiences, and the librarian To open up discussion about barriers to negative research behaviors (ie. procrastination)	
Small group activity—evaluation of resource credibility and purpose (small group, hands-on, followed by large group discussion)	To help students discover that they are capable of being savvy information consumers (that changing their behavior is doable)	Price/Adoptability
Continued emphasis on consulting with a librarian in various mediums: online chat, in-person, e-mail (large group discussion) and continued emphasis on how changing targeted behaviors is as easy and reliable as current behaviors (large group discussion)	To make the message of the ease and benefit of changing behaviors the central focus of the session.	Products
Six-week research map (handout, large group discussion)	To emphasize the return investment on consulting librarians early—to avoid procrastination of research	Price/Adoptability
Demonstration of the accessibility and ease of library resources ("It's as easy as Google," large group discussion)	To emphasize the placement of the product (better research behaviors)	Placement of Product
Weekly follow-up emails with links directly to resources that will help them change their behaviors (links to chatting with a librarian, major databases, citation materials, etc. throughout the six-week assignment)	To place the message and the supporting resources in a place that is likely to reach students where they are (online) when they need it (according to the six-week research assignment)	Placement of Message
Emphasis on allowing time for each stage of process and specific, relatable examples of how this produced better research	To allow for repetition of the messages and to give students memorable examples and reasons for changing behavior	Promotion

APPENDIX D. JOURNAL ASSIGNMENT

This assignment asks you to immerse yourself in a community that is foreign to you, which requires a good deal of research. The purpose of this journal is to keep track of your research process. Write a few paragraphs that detail anything you have done that will help you complete your essay. In order to receive full credit, you need to be thorough with your summary (lists are acceptable as well). Keeping a brief daily journal might also be helpful but be sure that you summarize your research efforts weekly. Here are a few guidelines that you can use in your journal entries:

Weekly Journal Prompts

1. Date the entry.
2. What did you do over the course of the week to help you complete your essay?
   a. Did you talk to someone about your ideas?
   b. Did you perform a Google search or some other basic search?
   c. Did you use the UK library databases?
   d. Did you brainstorm or map out your ideas?
   e. Did you conduct an interview?
   f. Did you visit the library? Which one?
3. What problems did you encounter?
4. What was the outcome of your work? (What did you find or accomplish?)
5. As you found sources, how did you determine the credibility and validity of what you found? (Why did you trust the source?)
6. What questions do you still have? Where do you plan to go next?
7. Have you asked a librarian for help? If so, was he or she helpful to you? How so? Did you ask anyone else for help? Who?
8. About how long did you spend researching for this essay this week?