

Information-Seeking Behavior of School Nutrition Program Directors in Small Districts

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ABSTRACT

Objectives

School nutrition program (SNP) directors require many information sources to help them perform a wide variety of tasks on a daily basis. The purpose of this study is to identify how SNP directors in small districts use and rate the information sources associated with their jobs. Specific objectives were employed to 1) determine directors' use of a variety of information sources; 2) investigate ratings of information sources in terms of usefulness and frequency; and 3) examine whether these ratings are associated with demographic characteristics.

Methods

A questionnaire was mailed nationwide to a random sample of 1,000 SNP directors working in school districts with 5,000 or fewer students. Respondents from 279 districts returned usable questionnaires. Data analyses included frequencies, chi-square, and analysis of variance (ANOVA).

Results

SNP directors rated each information source differently, depending on intended usage. U.S. Department of Agriculture (USDA) publications were more frequently utilized for menu planning and product and recipe selection than for marketing and function planning. Food shows and exhibits at state conferences were most frequently applied to marketing and function planning. Materials related to USDA commodities topped the list of resources that were rated very useful and most frequently used.

Application to Child Nutrition Professionals

SNP directors from small districts were more likely to use information sources with which they were most familiar, especially those produced by USDA. Consistent with other professions, directors use sources that are familiar, cost-effective, and easily accessible. The fact that materials and recipes related to USDA commodities were the most highly valued and frequently used provides helpful insights for industry and government agencies that are providing information to this audience.

INTRODUCTION

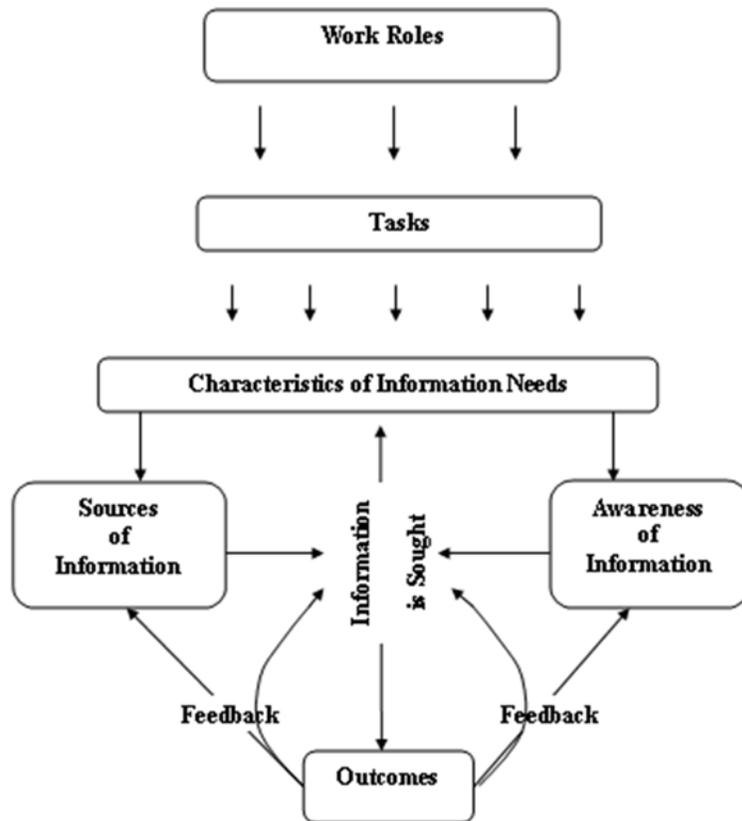
To be successful, SNP directors must perform a wide variety of tasks on a daily basis. Directors in small districts are particularly challenged to keep up with all the information required on the job, because they may be the only professional in their school district with foodservice responsibilities. In essence, some may be serving as a cook, in addition to director.

SNP directors perform 14 major job functions, including food production, procurement, marketing, and menu planning (Rainville & Carr, 2001). These job functions are the foundation of any school nutrition program because they focus on meeting the foodservice wants and nutritional needs of students. These tasks require SNP directors to locate information and resources to assist them in decision making and determining problem-solving strategies. The overwhelming amount of information available to SNP directors to help them make sound operational decisions makes it virtually impossible to keep handbooks up to date or handle new situations based on personal experience. In order to ensure that SNP directors make informed decisions, the acquisition of information then becomes an essential component of job competence.

The definition of information-seeking behavior has evolved from the concept that it consists of "discovering patterns or filling in gaps in patterns" (Case, 2002, p. 75). The new definitions are, unfortunately, restricted to problem-solving and intentional behavior (Leckie et al., 1996; Marchionini, 1995) or are too generic (Case, 2002). Numerous models of information-seeking behavior exist, however, and many were developed for specific tasks, such as online database searches, or reflect everyday life, such as purchasing an appliance (Case, 2002).

Model for Professional Information-Seeking

Leckie et al. (1996) proposed a model for information-seeking behavior for professionals (Figure 1). The model's basic assumption is that professionals' work roles include job functions that require them to seek information. General information needs are initiated from situations related to specific work tasks. Not all professionals, however, seek information using the same path. Individual demographics, situational context, importance, and complexity influence a professional's formulation of the information need. Additionally, age and career stage influence the information-seeking behavior (Gralewska-Vickery, 1976).



Sources of Information

Professionals utilize many information sources, including colleagues, handbooks, print media, and electronic media, in addition to personal knowledge and experience. Information sources may be categorized by the type of channel, including informal (peers), formal (conferences), print (magazines and ads), and electronic (Web sites and E-mail). These information sources often are combined by professionals in attempting to solve problems.

Awareness

Knowledge of information sources and assessment of the information affect the information-seeking process. Professionals use information sources that are trustworthy (Leckie et al., 1996), familiar (Gralewska-Vickery, 1976), cost-effective, and accessible (Curley, Connelly, & Rich, 1990). Accessibility is a major factor as professionals may use their own personal sources, rather than spend time to seek new ones (Connelly, et al., 1990). The principle of least effort was first proposed by Zipf in 1949 (Case, 2002). Zipf stated that individuals will adapt their actions to expend the least amount of effort. A 1977 study of engineers by Allen (Marchionini, 1995) found that accessibility of information was more highly related to frequency of use than to quality. Chen and Herson (1982) noted that information-seekers preferred interpersonal sources to authoritative print sources. As shown in Figure 1, the model recognizes that there are dynamic changes, dependent upon the situation.

Outcomes

Outcomes are the end point of the information-seeking process. The successful outcome is where

information is acquired, allowing professionals to accomplish their tasks. When the need is not met, further information seeking is required, as illustrated by the feedback loop (Figure 1).

Purpose and Objectives

Information-seeking behavior of scientists, scholars and professionals, such as doctors, nurses, dentists, librarians, and engineers, have been studied (Leckie et al., 1996). No research was found related to the information-seeking behavior of SNP directors.

The purpose of this study is to identify how SNP directors in small districts use and rate information sources. Specific research objectives include determining the directors' use of information sources, menu planning, product or recipe selection, marketing, and function planning; investigating their ratings of information sources in terms of usefulness and frequency; and examining whether these ratings are associated with personal or environmental characteristics. Results of this analysis might shed light on the information-seeking strategies of SNP directors, which could provide useful insights to industry and government agencies that provide information to this audience.

METHODOLOGY

Questionnaire

The authors designed a descriptive, associative study using a nationwide mail survey. The questionnaire asked respondents to evaluate various sources of information sources, including print materials from trade magazines and government agencies; sales and marketing materials provided by industry, trade organizations, and government agencies through product exhibits; print and electronic media; and professional education sessions and networking. Respondents were asked to identify whether the particular sources were used for menu planning, product or recipe selection, marketing, or function planning. An additional option was provided to indicate a lack of familiarity with the resource. Respondents also rated sources on two dimensions, usefulness and frequency, on a 7-point scale that ranged from "not useful" (1) to "very useful" (7) and "not used" (1) to "very often used" (7), respectively. Categorical questions asked about the respondent's job title, length of work experience in school foodservice, level of education, and district enrollment. Respondents also were requested to provide actual values on average daily participation, number of fulltime-equivalent employees (FTE), and percentage of convenience foods used.

A group of 12 SNP directors and foodservice management faculty pilot tested the survey during Fall 2003. Several sources were added to the list after reviewing their comments. They made no suggestions regarding clarity and readability of the questions. The Pennsylvania State University Institutional Review Board (IRB) reviewed and approved the questionnaire and data collection procedures. An informed consent and confidentiality statement was added to the questionnaire booklet as per IRB guidelines.

Sample

The population of interest was SNP directors from relatively small school districts. As directors from larger school districts have many sources available to them, they were not included in the survey. Instead, the questionnaire focused on smaller districts in which SNP directors were more

likely to be isolated and need to seek out information more aggressively. Further, the largest number of school districts in the U.S. have enrollments of less than 5,000 students. As a result, the survey targeted directors from school districts with no more than 5,000 students.

Market Data Retrieval, a national school marketing company based in Connecticut, provided a list of 1,000 names of individuals designated by school boards as directors of SNPs from school districts of 5,000 or fewer students. The sample was drawn randomly from all 50 states, and the authors made no attempt to stratify by state or region of the country.

Data Collection

Researchers mailed the survey to 1,000 SNP directors in early 2004, according to procedures outlined by Dillman (2000). The instructions on the questionnaire asked that it be filled out by "a school foodservice professional who is responsible for district menu planning and/or food product selection." Respondents were given a postage-paid sticker to adhere to the self-addressed back flap of the questionnaire booklet to mail back. The authors sent reminder postcards two weeks later. Additional questionnaires were sent as requested by potential respondents.

Data Analysis

The survey analyzed data using Version 8e of the SAS statistical package. Analyses included frequencies, chi-square, and analysis of variance (ANOVA). Categories used for analysis are reflected in Table 1. Analysis showed that respondents used all intervals on the 7-point scales rating information sources. However, to allow for greater cell size during statistical analysis, the responses were reorganized into a three-category ratings system. The usefulness scale included not useful (1 and 2), somewhat useful (3, 4, and 5), and useful (6 and 7), while the frequency scale included not used (1 and 2), somewhat used (3, 4, and 5), and often used (6 and 7).

RESULTS AND DISCUSSION

SNP Director Characteristics

SNP directors from 279 school districts returned useable questionnaires (27.9%). Representation was from 41 states. Most respondents (63%) indicated a job title of director, and 33% indicated they had more than 21 years of work experience in the SNP. Another 34% had 10 or fewer years of work experience in this type of foodservice segment. Twenty-five percent held a high school diploma, 24% took some college classes, and a baccalaureate degree or better was attained by 36% of the respondents (Table 1).

School Nutrition Program Characteristics

Table 1 lists characteristics of the participating school nutrition programs. Approximately 98% of the districts had enrollments of 5,000 or fewer students, as anticipated by the sampling strategy; and almost 49% had enrollments of 2,000 or fewer students. For 91% of the districts, the average daily participation (ADP) rate in the National School Lunch Program (NSLP) was 51%, while overall the participation rate was 70%. An average of 15 fulltime-equivalent employees (FTE) were hired by the school nutrition program, and a majority of the districts (70%) employed 20 or fewer FTEs. A large number of programs (42%) purchased ready-to-heat food items for meal preparation, such as precooked ground beef patties.

Use of Sources

Table 2 reflects how SNP directors use sources for menu planning, product or recipe selection, marketing, and function planning. Chi-square analysis show that SNP directors have specific uses in mind for the information sources utilized, and they do not select them equally among the four alternatives. Further, the fifth alternative, indicating a lack of familiarity with a particular resource, was provided. The results seem to indicate that the SNP directors were discriminating in their responses and realized that the value of information sources depended upon intended usage. For example, magazines were used more frequently for product or recipe selection, marketing, and function planning, which seems to coincide with the advertising space for new and improved food products allocated in trade publications.

Publications from the U.S. Department of Agriculture (USDA) were used more frequently for menu planning and product and recipe selection than for marketing and function planning, which corresponds to their subject matter. The "not familiar" alternative was listed the least for USDA materials, indicating they were the most widely known. USDA materials often are sent directly to each school food authority, and the National Food Service Management Institute (NSFMI) makes additional copies available for purchase. USDA publications generally are considered to be familiar, convenient, accessible, and cost-effective, which are all important variables in modeling the information-seeking of professionals (Leckie et al., 1996).

The sources used most frequently for function planning were made available through industry sales and marketing efforts. Food shows and exhibits at state conferences were well known and highly rated in this category, which speaks to the value, convenience, and relative accessibility of this type of information. Survey participants most frequently selected state conferences and local SNP director meetings as information sources in the professional educational sessions and networking category for all four usage alternatives. Once again, these information sources indicate a high level of familiarity, low cost, convenience, and accessibility.

Resource Usefulness and Frequency of Use

SNP directors evaluated each information source in terms of levels of usefulness and frequency. These ratings were given by the directors based on specific tasks, such as menu planning and marketing. Table 3 lists the sources that fell into the upper and lower rating levels for usefulness and frequency. Percentages were calculated from the number of respondents who rated that source at that particular level, divided by the total respondents. Only the information sources with greater than a 50% frequency rating are listed. Overall, more sources were rated "very useful" than "not useful." Materials related to USDA commodities were the most highly rated in both categories. Television commercials were more likely to be rated "not useful" and "not used."

Zipf's theory of least effort (Case, 2002) seems to be supported by the survey results. USDA sends its recipes, food commodity information, and other materials to each SNP. As a result, these sources are readily available to directors. Use of these materials has the "stamp of approval" from the federal sponsor, and the effective use of commodities offsets other food

purchases and reduces food cost. Similarly, meetings are either local or within the state, which highlight their accessibility and minimize expensive and time-consuming travel.

The finding concerning television commercials is not consistent with Zipf's theory, as these advertisements are free *and* easily accessible. SNP directors may not have the time to watch TV or do not value the connection between food commercials and students' increased demands for items advertised. Another possibility is that the directors found the term "television commercials" too broad or ambiguous to allow for accurate interpretation. More than 50% of SNP directors did not use direct E-mail from manufacturers. This may be related to time, availability of Internet connectivity, or the director's assessment of credibility.

Relationship to SNP Director Characteristics

The authors used chi-square analysis to determine if there was a correlation between SNP director characteristics and their views on the highest- and lowest-rated sources of information. Ratings for usefulness and frequency (Table 3) were not significantly different between levels of education or SNP experience. This indicates a consensus among directors with varied educational backgrounds and work histories.

Relationship to Program Characteristics

Analysis of variance (ANOVA) was used to determine whether program characteristics were associated with SNP directors' opinions concerning the highest- and lowest-rated information sources (Table 3). There were only a few significant differences found in the usefulness ratings associated with program characteristics. SNP directors who rated exhibits at state conferences and *USDA Recipes for Child Nutrition Programs* as "somewhat useful" and "useful" had more employees than directors who rated these sources as not useful. Similarly, directors who rated the *USDA Food Buyer's Guide* and USDA commodities and materials as "useful" employed more staff than those who rated these sources as "not useful."

SNP directors with higher ADP percentages and a greater number of FTEs used USDA's *Food Buyer's Guide* more often than other participants. An increased level of program participation also was associated with a higher use of direct E-mail from food manufacturers. Directors who "somewhat used" television commercials hired more employees than either directors who used them "often" or "not often." Directors who hired a greater number of FTEs used USDA commodities and materials less often than directors with fewer employees. Additionally, directors who "very often" used exhibits at state conferences had more employees on staff than directors who used this resource "somewhat" or "not used."

ADP percentages and number of FTEs were used as indicators of program size. For the most part, directors of larger SNPs utilized a variety of information sources more frequently and found them more useful. A major exception was the rating for USDA commodities and materials. Larger programs may use more commercially-purchased food and, therefore, the relative importance of commodity information is diminished in this setting.

CONCLUSIONS AND APPLICATIONS

SNP directors perform a myriad of tasks on a frequent basis, including menu planning, food product selection, marketing, and function planning. These four job functions constitute core competencies of the school nutrition business. While there are a wide variety of information sources to facilitate the tasks associated with these functions, this study indicates that SNP directors from small districts tend to use readily available, local sources. Consistent with other professions (Connelly et al., 1990; Gralewski-Vickery, 1976), SNP directors use sources that are familiar, cost-effective, and accessible. As found in the model by Leckie et al. (Figure 1), professionals perceive a successful outcome when their need is satisfied. With familiar USDA materials on hand, SNP directors from small districts are able to obtain information necessary to make sound decisions, particularly in planning and preparing nutritious menus and purchasing food products.

Food manufacturers that provide products and services to the SNP market can use the results of this study to evaluate their sales and service strategies. Companies might consider ways to make their information easily accessible at the local level. Regional food shows, state conferences, and local SNP director meetings are highly valued and used by SNP directors from small school districts more than national conferences. Perhaps this reflects frequency of opportunity or limited travel budgets.

The study finding that USDA commodity materials and recipes are the most highly valued and most frequently used has interesting implications. Approximately 42% and 16% of the SNP directors involved in this study purchased ready-to-heat and ready-to-serve foods, respectively (Table 1). Despite these data, government agencies and food product manufacturers still develop recipes for distribution. When manufacturers develop recipes, they may consider designing them to combine their products with USDA commodities to yield "value-added" menu items. In terms of information-seeking behavior, government agencies and manufacturers that mail recipes and product information directly to SNP directors, and food distributors that furnish this type of information at local food shows, appear to be targeting their audience correctly. These groups are providing information that meets the criteria of accessibility, especially in light of the fact that many SNP directors from small districts do not use web-based or E-mailed information sources.

According to this random survey, one-third of the foodservice directors in small districts have more than 20 years experience in SNPs, and many may have additional years of work experience in other segments of the industry. Researchers previously have reported the aging status of the SNP director population (Conklin et al., 1995). As this population retires and is replaced by younger professionals, marketing and service strategies may need to shift. Additional research is warranted to determine the information-seeking behavior of a younger population. The next generation of SNP directors might use electronic media much more than current directors to locate desired information. If so, government agencies and companies would need to enhance their efforts to disseminate information by electronic means

REFERENCES

Allen, T.J. (1985). *Managing the flow of technology*. Cambridge, MA: The Massachusetts Institute of Technology.

Case, D.O. (2002). *Looking for information*. San Diego, CA: Elsevier Science.

Chen, C., & Herson, P. (1982). *Information-seeking: Assessing and anticipating user needs*. New York: Neal-Schuman.

Conklin, M.T., Sneed, J., & Martin, J. (1995). Preparing child nutrition professionals for the 21st century. *School Food Service Research Review*, 19, 6-13.

Connelly, D.P., Rich, E.C., Curly, S.P., & Kelly, J.T. (1990). Knowledge resource preferences of family physicians. *Journal of Family Practice*, 31, 121-122.

Curley, S.P., Connelly, D.P., & Rich, E.C. (1990). Physicians' use of medical knowledge sources: Preliminary theoretical framework and findings. *Medical Decision Making*, 10, 231-241.

Dillman, D.A. (2000). *Mail and internet surveys: The tailored design method, 2nd Edition*. New York: John Wiley & Sons.

Gralewska-Vickery, A. (1976). Communication and information needs of earth science engineers. *Information Processing and Management*, 12, 251-282.

Leckie, G.J., Pettigrew, K.E., & Sylvain, C. (1996). Modeling the information seeking of professionals: A general model derived from research on engineers, health care professionals and lawyers. *Library Quarterly*, 66, 161-193.

Marchionini, G. (1995). *Information seeking in electronic environments*. New York: Cambridge University Press.

Rainville, A., & Carr, D. (2001). *Competencies, knowledge, and skill statements for district school nutrition directors/supervisors*. University, MS: National Food Service Management Institute.

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