Knowing Journal Users: Methods for User-Focused Research and a Case Study of Pediatricians

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Knowing Journal Users: Methods for User-Focused Research

and a Case Study of Pediatricians*

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Abstract

Many recent research studies have concentrated on how people use journals or on their reading patterns and preferences. These studies use a variety of research methods, including surveys, interviews, observations, and experiments. When looked at together, the results allow us to draw a bigger picture of how scientists and scholars use information. This case study is comprised of a series of surveys and focus groups designed to elicit information about the reading behaviors and preferences of pediatricians. While participants in the study were all members of the American Academy of Pediatrics (AAP), practice setting varied widely from those pediatricians occupied with research at academic and government institutions to those primarily focused on clinical practice. In addition to looking in depth at reading of one journal, *Pediatrics*, the study asked questions about wider information using behavior, employing a variety of techniques to ascertain how pediatricians respond to and use print and online professional information. Among other study findings, we determined that members of the AAP rely heavily on personal copies of print material for current awareness reading;
reading for research is more likely to be from electronic journals, often accessed through library subscriptions.

**Introduction**

Hundreds of recent research studies focus on how users respond to and interact with print and electronic journals. Many of these studies have looked at how the use of scholarly materials varies across disciplines or across various work roles or levels of expertise. Although there is no one typical user for whom a single system design or collection decision can be made, the research does demonstrate that users can be segmented into groups that display similar preferences and patterns of use (Tenopir, 2003). For example, studies over the years consistently show that physicians’ journal reading behavior is different from that of other subject experts. Physicians tend to read more articles on average, spend less time per reading, read from far more print journals (in particular personal subscriptions), and read most frequently for current awareness (Tenopir, King, & Bush, 2004.) Although their overall amount of reading is skewed towards current awareness reading, physicians tend to rate the value of readings higher for those articles read for consultation, research, or writing. They also tend to read many articles from personal print subscriptions. Though they do use electronic journals, especially those provided by a medical or university library, their usage of these materials is lower than scientists in other fields. Like other professionals, physicians face increasing pressures to read more, keep up with more topics and more literature, and make the best use of their time. Peer-
reviewed journals and journal articles that are delivered and designed in ways that best serve these busy readers help physicians make more productive use of their limited time.

In 2004 the AAP, with Carol Tenopir and Donald W. King, conducted two surveys of AAP members. In addition, two focus groups of members of AAP provide further insights into reading preferences and tendencies. The AAP engaged the Kaufman-Wills Group to recruit, moderate, and report on two focus groups, one with 8 academicians and another with 8 clinicians.

The AAP is an organization of approximately 60,000 pediatricians. Pediatrics, the official journal of the American Academy of Pediatrics, publishes papers on original research or observations and special feature articles in the field of pediatrics as broadly defined. The print edition was established in 1948 and now has the largest circulation of any peer-reviewed pediatric journal, reaching more than 62,000 subscribers worldwide. The online edition of Pediatrics was launched in 1997 and features full-text versions of all articles that appear in the print edition of the journal. Additionally, the electronic edition of Pediatrics features online-only articles and letters. Most AAP members receive both print and access to the electronic versions of the journal Pediatrics as part of their membership benefits.

This research was undertaken with the aim of helping the AAP better understand the information seeking behavior of its members, leading to the development of better journal delivery methods for the present and future. It is also hoped that it will provide medical librarians with insights into the reading patterns and preferences of their constituents in order to better serve their wants and needs.

Specifically, it is hoped the findings will help librarians and publishers:
• make decisions on electronic and print journal purchases in libraries
• design better journals and systems
• offer better library services
• stay relevant in the future
• drive information literacy instruction
• increase use of journals

Research methods

There are many effective methods for user behavioral research, including

1. Surveying users
2. Interviewing users (including focus groups)
3. Observing users through experiments
4. Observing users in natural settings (including keeping journals)
5. Transaction log analysis (included under "observing users") (Wang 1999)

Surveys of users are typically done by sending a questionnaire by e-mail, the Web, or paper mail to a randomly selected percentage of the population under study. Tenopir and King, for example, survey samples of university faculty, members of professional organizations such as the American Astronomical Society, and scientists in companies and government laboratories. Conclusions based on the responses are generalized to the whole using appropriate statistical tests. Care in selecting samples and a reasonable return rate are necessary to draw valid conclusions. (Tenopir, 2003)
Interviewing users is done by asking various questions including preference, behavioral, and critical incident questions. Demographic questions are always asked to allow conclusions to be made about respondents. Tenopir and King use critical incident questions in their surveys, which ask users to focus on the last article read. Critical incident, plus demographic data in surveys provide quantitative data that allows conclusions to be made at the readings level such as purposes and outcomes of readings.

**Focus Groups**

Focus groups, on the other hand, are qualitative, not quantitative. Care is taken in recruiting a cross-section of participants representative of the audience at large, but ultimately, the groups are just that, a group of individuals. Still, experience has shown that focus groups can be very helpful in adding context and explanation to what is already known from routine contact with customers and in more quantitative findings disclosed through reader surveys. In this study, focus groups of academicians and clinicians yielded a blend of surprising, confirming, and interesting findings, all of which we believe will be helpful in providing direction to the AAP.

The focus groups' research objective was to gain actionable feedback on how to improve *Pediatrics*’ current print and online design to better meet readers’ information needs. The value of the focus groups was to explore, in depth, areas of insight for *Pediatrics*, including information needs and ideas for improving the usability of the Journal’s cover, table of contents, and text design, along with organization, length, and presentation of content. For the online edition of *Pediatrics*, these areas included attitudes
toward and ideas for improving site design and organization, navigation tools, site content, and search options.

**Surveys of Pediatricians**

Two separate surveys of the American Academy of Pediatrics were sent to two non-overlapping random samples of 2000 each from the AAP membership database. The first survey, *AAP Reading Survey for Pediatricians* ("AAP Survey"), focused specifically on reading of the AAP journal *Pediatrics* and other AAP journals. The survey asked preference and use questions about *Pediatrics* and other specific journal titles and three sections: 1) scholarly journal reading and use, with questions about recent readings and purposes for reading in 21 pediatric-related journals; 2) reading and use of *Pediatrics*; and 3) demographics. Six-hundred and eighty-five of 2000 respondents returned AAP survey questionnaires (34.25% response rate).

The second survey, *Article Reading Survey for Pediatricians* ("Article Survey"), used a form of the critical incident technique, focusing on the last article read by each respondent. This survey also had three sections: 1) scholarly journal reading and use, which asked general questions about amounts of scholarly reading in general and then asked each respondent to focus on the last article read; 2) purpose and consequences of the last article reading, and 3) demographics. The Article Survey used the same technique and asks many of the same questions asked in a series of surveys of other subject specialists conducted over three decades (Tenopir & King, 2000). This questionnaire was returned by 666 respondents (33.3% return rate.)
All together, 1351 AAP members responded to one of the two survey questionnaires. Both surveys asked standard demographic information such as age, gender, academic degree, year of last degree, and state or country of practice. In addition, we asked some demographic questions particularly relevant to medical practitioners, including pediatric sub-specialty, practice setting (hospital, office, etc.), whether or not they had access to a library with a medical collection, use of PubMed, and use of a personal digital assistant (PDA.) Some demographic questions provided comparable information with other surveys conducted by Tenopir and King, including awards received or journal articles published in the past 2 years and number of personal subscriptions (either paid or free.)

Findings

The most frequently cited reason given for reading the print edition of Pediatrics was to “keep current” (78.8% of respondents). This answer was not surprising given that print publications are ideally suited to browsing current research. The next most cited reason (36.7%) given by respondents was to “find specific information.” These answers were followed by “know what my colleagues are up to” (20.2%), and “learn about other subspecialties” (12.0%). “Subspecialties” refer to disciplines within the field of pediatrics, such as neonatology, pediatric cardiology, adolescent medicine, etc. The focus groups elicited remarkably similar responses from participants. Several focus group participants went on to clarify that when they pick up the print edition looking to “find specific information” they are usually looking for an article that a colleague has told them about in a recent issue.
When asked what portions of the print edition of *Pediatrics* they read regularly, the most frequent response was, not surprisingly, article abstracts. As corroborated with our focus group findings, a large majority of reading (71.3%) begins with an abstract. If the abstract piques the reader’s interest, he or she will go on to read more of the article. The most popular types of articles are AAP policy statements, followed by research articles, and then commentaries. One interesting finding was the popularity of the table of contents on the cover. The majority of readers prefer it to the more detailed, interior table of contents. Our focus group participants almost universally indicated that they circle articles of interest on the table of contents upon receiving the journal for future reading.

18.1% of respondents indicated they regularly read the “Green Pages”. The Green Pages consist of printed abstracts of articles that can only be found (in the full-text version) online. These abstracts are printed on green paper and bound into the print edition of the journal. Our focus group readers provided some explanation as to why the reading of these abstracts is not higher. We were told by a number of participants that the green paper makes the abstracts difficult to read and that the page layout—which differs from other abstracts in the journal—is too cluttered. This point is underscored in the survey data. While respondents don’t generally believe strongly that these electronic-only articles are “second class” or that they are reviewed less strictly as print, the majority of respondents agreed with the statement “electronic only articles are as useful to me as print.”

For those who do use the electronic edition, the most commonly cited reasons for reading were to “find specific information (19.9% of the total respondents); to “keep current” (8.9%) and to “know what my colleagues are doing” (1.8%). When asked what
sections of the electronic edition respondents used most frequently, the items at the top of
the list, in keeping with the responses above, were related to finding specific information.
“Advanced Searching” was the most frequently cited electronic feature (14.2%), followed
by “Links to Medline” (12.1%). Browsing-oriented features followed, including “Most-
read Articles” (8.9%), “Topic Collections” (5.4%), “E-mail Alerts” (4.7%), “E-Letters”
(4.7%), and “Free Reference Links” (4.5%).

In keeping with the emphasis on finding specific information, the majority of
respondents agreed that the electronic edition allowed them to “search comprehensively.”
They majority of respondents also agree that the “online features are valuable” and that
“it is easy to find things.” A minority of respondents agreed with the statement that
“using it is time consuming.”

Throughout the surveys, a majority of respondents indicated that, although they
feel comfortable with the online edition of Pediatrics, they do not find online journals
convenient for them. This differs markedly from other disciplines, particularly that of
astronomy where astronomers read from electronic resources (80%) far more than print
resources (20%) (Tenopir et al 2005).

This bias towards print can be seen most dramatically when respondents were asked
whether they would prefer receiving only the print edition of Pediatrics, only the online
edition, or both print and online. A clear majority prefer print only (60%). Only about 9%
respondents want electronic only, while about 32% want both. All together then, 92% of
respondents wish to continue to receive print, either alone or in conjunction with
electronic delivery. The reasons for this preference for print become evident when one
looks at how (and how much) pediatricians read, what sources they read from, and where they do their reading.

This set of respondents estimates they read on average between 145 and 185 articles per year (the lower figure eliminates two outliers who report reading 999 and 1000 articles monthly). [Carol: should we provide examples of article reading from other disciplines here?]. In addition to this high volume of article reading, pediatricians report they read many more abstracts.

Another thing that sets pediatricians apart is their reliance on personal subscription for their readings [Carol: should we provide comparison data here?]. The fact that pediatricians do not rely as heavily on library-provided journals for reading makes it far more practical to read in print. In other disciplines where library-subscribed journals make up the majority of reading, it is far more convenient for most scientists to access their readings online.

Our research has found that pediatricians do their scholarly reading most often at home – 50.5% (328 responses) of those who answered this question indicated they were home when they read the critical incident article. The second most popular location is at the office (36.8%), with hospital/clinic far behind (6.2%) other places, including a library, in transit, or at the gym, on the beach, on an airplane, etc. accounted for 6.7 of the readings. Focus group participants describe carrying copies of current print issues to read whenever convenient. Given that much of pediatrician’s reading takes place outside of the office, the importance of portable, printed professional reading material becomes evident.
Conclusion

The results of this case study using two methods of data collection show that pediatricians prefer print resources to electronic resources for current awareness reading. Although they are comfortable with electronic devices such as PDAs, they read more print resources because of portability and easy accessibility. They rely on personal print subscriptions for current awareness reading, but prefer electronic sources for researches, and for access to older articles. One finding is time for every group of scientists, engineers, or physicians studied over the last decade – information forms and sources that are convenient to the way they work and principal purposes of reading are preferred.

Reference:


KING DW, TENOPIR C, MONTGOMERY CH, AERNI SE, Patterns of Journal Use by Faculty at Three Diverse Universities. D-Lib Magazine 2003 Oct: 9(10)


TENOPIR C, KING DW, BUSH A. Medical Faculty’s Use of Print and Electronic Journals: Changes over Time and in Comparison with Scientists. J Med Libr Assoc 2004 Apr: 92(2): 233-41


Appendix:

<table>
<thead>
<tr>
<th>Discipline &amp; Workplace</th>
<th>Reading (articles/year)</th>
</tr>
</thead>
</table>

12
<table>
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<tr>
<th>University Medical</th>
<th>~322</th>
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<tbody>
<tr>
<td>Practicing Pediatricians</td>
<td>~180</td>
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<tr>
<td>University Scientists</td>
<td>~216</td>
</tr>
<tr>
<td>All Scientists</td>
<td>~130</td>
</tr>
<tr>
<td>Social Scientists/Psych</td>
<td>~191</td>
</tr>
<tr>
<td>Engineers</td>
<td>~111</td>
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</table>

Figure 1. Reading By Subject Discipline and Workplace from Tenopir & King Surveys

Figure 2. Year of articles by Subject Discipline
Figure 3. Source of Reading by Workplace & Subject Discipline

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Pediatricians</th>
<th>Univ. Medical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Awareness</td>
<td>50.0</td>
<td>22.1</td>
</tr>
<tr>
<td>Treatment</td>
<td>18.2</td>
<td>-</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>10.7</td>
<td>-</td>
</tr>
<tr>
<td>Teaching</td>
<td>5.3</td>
<td>16.9</td>
</tr>
<tr>
<td>Researching</td>
<td>5.1</td>
<td>36.4</td>
</tr>
<tr>
<td>Consulting</td>
<td>3.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Other</td>
<td>5.8</td>
<td>9.0</td>
</tr>
<tr>
<td>Writing</td>
<td>1.6</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Figure 4. Principal Purpose of Readings by Workplace
<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Home</td>
<td>50.5</td>
</tr>
<tr>
<td>Office</td>
<td>36.8</td>
</tr>
<tr>
<td>Hospital/Clinic</td>
<td>6.2</td>
</tr>
<tr>
<td>In transit</td>
<td>3.1</td>
</tr>
<tr>
<td>Other</td>
<td>2.5</td>
</tr>
<tr>
<td>Library</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Figure 5. Location of Pediatricians When Reading (n=650)