

Public Interest in Science and Research News

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More people receive their science news in the print media than in the broadcast media, according to recent research. Studies indicate that while the broadcast media are preferred for sources of some kinds of information, people tend to turn to the print media for complex information.

People are interested in different kinds of science information, according to several studies. What relationships exist between science information and public attitudes toward science? This paper will review some of the literature on these subjects and report on a recent survey on public interest in science and research news.

Estimates of audience size for scientific information vary appreciably. An early study by Patterson asked participants if they usually at least scan the science articles in the newspapers and magazines that they read. Some 54 percent of those participating in the study said they considered themselves science readers.¹

Nearly half the public regularly used a combination of generalized and specialized science information sources, according to a recent National Science Foundation study by Jon Miller of Northern Illinois University. Nearly half also demonstrate a high level of interest in science stories.²

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Education and Medium Preference

Education had a relationship with medium preference as well as on science readership patterns in studies by Wade. "Education . . . is a powerful predictor of mass media use," she said. "The social roles associated with sex and age have less to predict about the use of media sources, and career situations described by occupation and income appear to be important only when a person has less than high school education. But the more education a person has, the more likely he is to use print as his major source of news and information."³

Newspapers "are as dominant in providing current knowledge of science as television is in providing current news," according to Wade. Funkhouser and Maccoby supported the statement that print media are the major sources of science information for laymen.⁴

Reviews by Cronholm resulted in the same conclusion. "Where do people go for the scientific information they seek? Several investigators have found preferences for print media over broadcast media for scientific information, including health information, but reversed preferences for political information."⁵

"Science and medicine writing in the newspapers serves a powerful alerting function, making it possible for long-term 'educational' processes to take hold in the community,"⁶ Ubell concluded.

For adults who have been out of school for five years or more, according to Kreighbaum, "the mass media coverage remains the one big, broad highway for informing a majority about science, technology, and medicine. For most of the adults, the popular communications media are the chief way for bridging the gap between 'the two cultures'."⁷

"The data seem to indicate this model," suggested Wade. "From school we emerge with a cognitive map, with an organized life space, with certain learning skills and habits. More education means more skills and wider interests — in other words, a more complex map. Through the media we chiefly fill this map. From the parade of events through television, which is the most vivid and dramatic carrier of events, we tend to fill in facts and findings, but to add concepts and understand we are likely to turn to the slower print media which can somewhat more easily offer perspective and interpretation. This, we can assume, is one reason why the printed

media are more likely to serve as a source of long-term science and health knowledge, and the broadcast media as a source of political facts which are useful in an election campaign that calls them forth and may be forgotten thereafter."⁸

Why Readers Don't Read Newspapers

A recent study by Poindexter⁹ ranked several reasons given by non-readers for not using newspapers. In order of importance, the reasons were: lack of time (20 percent), preference for another medium (18 percent), cost (16 percent), lack of interest (15 percent), health problems (8 percent), circulation problems (8 percent), language (6 percent), newspaper content (4 percent), and don't like to read (2 percent).

Education, sex, and income have been suggested as correlates of science readership. Some data suggest that education is more important than age as a predictor of confidence in scientists. In a 1973 study 53 percent of the college graduates surveyed expressed great confidence in scientists, compared with 38 percent of those with only high school education and 28 percent of those with less than a high school education.¹⁰ The college educated, in other words, were almost twice as likely to be favorably inclined toward science as the least educated group. National data from other studies show a similar pattern.

Wade reported both sex and education as correlates to science readership. Women were more likely than men to read about health, and better educated people were more likely than less educated ones to read.¹¹

Etzioni examined age as a correlate in attitude toward science. Secondary analysis from a national survey showed that people from 18-29 years old — those often believed to harbor strong antiscience sentiment — had more confidence in science leaders than did those in any other age group, he reported. Conversely, the oldest group, those 60 and older, were the least confident in science. In this age group only one in three reported great confidence in science. Socio-economic factors also seemed to have a positive and linear relationship to confidence in scientists.¹²

High technology along with a more educated public, enhanced by a heightened interest in science brought on by the space program, "has resulted in a boom in science publications," wrote Dougherty.¹³

Understanding the World

People are generally interested in science, Patterson suggested, because it offers the chance to understand the world better. "But people want their science in a palatable form. They consistently rejected articles they called 'dull' or 'hard,' or 'confusing' or 'too technical,' no matter what the subject, and ranked at the top of the scale features written in a lively style — no matter what the content."¹⁴

According to Funkhouser, few people read science information at all. "Studies have shown¹⁵ that public awareness of current science is dismayingly low, to say nothing of knowledge or understanding."¹⁶ Findings by Tichenor¹⁷ agree with Schramm's report that public awareness of modern science is very low.

Mayer has blamed this situation on weaknesses in science curriculums in this country.¹⁸ People are not prepared to digest science information, he said. "Science curriculums should be reinforced in our high schools and improved in our colleges."

Mixed attitudes about science have been reported by several researchers. In one study using an occupational stratified sample from the Boston area 33 percent of the sample scored on both high pro- and anti-technology statements, such as, "machines have made life easier," and, "people have become too dependent on machines."¹⁹

Is effective communication of science information to the public an important goal?

How About Science's Role?

One reason it is important, suggested Perlman, is the role science plays in our society. ". . . Above all," he said, "science is and has been mankind's greatest intellectual adventure; as much a part of our culture as music or art or literature. Surely the mass media have as much business reporting and interpreting science as they do ballet or basketball." The scientific enterprise, he added, "merits even fuller coverage because of its drama, mystery, human relevance, successes, failures, and newsworthiness."²⁰

Perlman explained another reason why communication of science and research information to the public is important to society. The scientific enterprise is expensive and it requires financial support and knowledgeable overseeing by the public.

Science yields practical consequences, he noted, that require public decision making — to fluoridate or not to fluoridate, to finance dialysis centers or not to finance them, to build breeder reactors, or fund fusion research, or both.²¹

“All scientific inquiry must ultimately serve society, for it is the whole of society that endows science with its charter,” Perlman said. “The services science performs may be as practical as creating a transistor, or as intellectually exciting as investigating the neuro-transmitters of the brain. But science can serve society only if it is healthy and responsibly independent; and these qualities depend most critically on an informed public. The mass media are the public’s principal channels to timely information.”²²

Paying the Bill for What’s Not Understood

A similar observation is offered by Katherine Lord, information officer for the Center for Disease Control, Atlanta. “We cannot expect the American people to continue footing the bill for something they don’t understand and may not consider relevant.”²³

According to Ubell, all but a few scientists now realize more than ever “how the progress of science depends on an understanding and financially capable public. Science has become too expensive, too demanding . . . to be solely supported by the bequests of rich men, by the general endowments of universities, and by the intellectual wanderings of isolated geniuses. Only a well-financed government can afford a \$33 million atom smasher, a \$100,000 ultra-centrifuge, or any of the multi-million dollar space probes.”²⁴

Etzioni made this conclusion: “The scientific enterprise seems to be in a state where it could benefit from a major effort to broaden and deepen the public’s understanding of science. Of all American institutions, science seems to be the least understood by the wider public. And, spreading science information and educating various publics to its values seem to be relatively effective in improving attitudes toward science. Therefore, a major campaign to inform and educate the public would yield more understanding and support than such campaigns usually yield.”²⁵

Checking Attitudes

A survey was conducted to examine attitudes toward science and media use patterns. The study was supervised by Dr. Paula M. Poindexter who was a member of the faculty of the University of Georgia Henry W. Grady School of Journalism and Mass Communication. She has since accepted the position of special projects coordinator, marketing research department, *Los Angeles Times*.

The sample from the telephone survey, conducted in Clarke County, Georgia, was systematically selected from the telephone book by beginning at a random point and taking every 76th number, with the last two phone digits determined by random number tables. This procedure allowed for selection of unlisted and new telephone numbers.

The 12-minute telephone interview included questions on frequency of newspaper and magazine readership, on movie-going, use of public and cable television, science interest, and attitudes toward science. Telephone interviews were conducted by graduate students trained in survey research methods. Open-ended questions were included in some subject areas, and were coded for analysis.

Some 500 numbers were drawn for the primary sample and 500 numbers were drawn for the alternate sample. Additional numbers were drawn during the subsequent interviewing period. The total number of the obtained polled survey was 1,144. Of this number, 433 numbers were thrown out (74 numbers were for residences outside Clarke County and 359 were either businesses or disconnects). This elimination left a total of 711 numbers.

Attempts to interview resulted in 128 no answers and 130 refusals. Eight numbers were eliminated as "incompetent" respondents (drunk or incoherent). In addition, several numbers were thrown out because of errors in procedure to contact respondents (less than three callback attempts). The final survey response rate was 378 out of 711 or a little more than 53 percent. This rate is large enough to use with moderate confidence in drawing conclusions.

Readership Correlates

Responses were analyzed by this student for structural correlates of readership, focusing on demographic characteristics

suggested in previous research. Possible correlates, suggested by earlier studies, included age, education, occupation, marital status, race, and sex.

These independent variables were analyzed in relation to dependent variables of frequency of reading science news in newspapers and in magazines, reasons given for not reading science news, type of science news respondents were most interested in, and attitude toward science. In some cases, significance of the relationships was observed at greater than $p = .0000$, indicating high correlation between these variables. The Cramer's V Test was applied in all cases to determine the strength of the relationship. The null hypothesis was tested with p less than .05.

To measure the frequency of reading science news in the newspaper respondents were asked, "How often do you read articles about science in the newspaper? Frequently, Sometimes, Seldom, or Never." Of the respondents answering this question, 32.2 percent said frequently; 29.8 percent, sometimes; 21.5 percent, seldom; and 16.5 percent, never.

To measure the frequency of reading science news in magazines, respondents were asked, "How often do you read articles about science in magazines? Frequently, Sometimes, Seldom, or Never." The responses were 17.6 percent, frequently; 20.3 percent, sometimes; 28.6 percent, seldom; and 33.2 percent, never.

Newspapers Read More Than Magazines

These responses indicate that people tend to read articles about science news in newspapers more than in magazines.

Respondents indicating they never read articles about science in newspapers or in magazines were asked the following open-ended question: "People have different reasons for not reading science news. Why do you seldom or never read science news?"

Responses to the question were coded in four categories, "(1) Articles not interesting, boring; (2) Too technical, don't understand; (3) Lack of time, no chance to read; and (4) Don't care about science news, not interested." Of the respondents answering this question, 35.8 percent said they were not interested in science news. Some 25.9 percent said they considered the articles boring. Much smaller percentages said the articles were too technical or they didn't have time to read.

Survey respondents were also asked to rank application of three reasons given by people for reading science news — to keep up with latest scientific developments, to form opinions about scientific developments taking place, and to have something to discuss with friends.

Responses indicated a significant difference in reasons people may have for reading science news in the paper. To keep up with the latest developments was the strongest reason indicated.

Kinds of Science News Interests

To measure which types of science news readers were most interested in, respondents were asked, "Which type of science news are you most interested in? Medicine, research and development, health and nutrition, environment, space news, and technology." The responses ran as follows: medicine, 31.9 percent; research and development, 12.0 percent; health and nutrition, 20.7 percent; environment, 10.8 percent; space, 9.6 percent; and technology, 7.2 percent. Responses showed a preference for news on medicine and nutrition, followed by research and environment.

Respondents were also asked if they agreed with the statements, "Science is the main reason for America's progress," and "Science creates problems for society." A high percentage of respondents indicated moderate agreement with both statements (58.1 percent with the first statement and 49.3 percent with the second statement).

Analysis of responses to the science readership frequency question indicated significant relationships with the variables of education, income, sex, and race.

A positive correlation was observed between readership frequency and education level. The higher the education level of the respondent, the more likely they were to read science news in the paper. Of the respondents with only some high school education, 36.2 percent said they never read science news, and only 9.1 percent said they frequently read science news in the paper. Those with education beyond high school level were much more likely to read science news. Of the respondents who had completed college 84.7 percent said they read sometimes or frequently. Less than 20 percent of those with less than high school education said they read sometimes or frequently. This relationship was observed with

high significance ($X^2=60.64178$, 15df, p less than .001). A moderate positive strength of the relationship was observed (Cramer's $V=.23$).

Types of Interest By Sex

A significant relationship was also observed between the sex variable and the responses variables in subject categories to the question, "What type of science news are you most interested in?" Of the females responding to the question 41.4 percent indicated most interest in medicine and 31.0 percent indicated most interest in health and nutrition. Of the males responding to this question, the percentages were 19.8 and 8.1, respectively.

Males responding to the question showed preferences for news in the categories of research and development, environment, space, and technology. The preference of females to news on medicine and health-nutrition was highly significant ($X^2=59.56548$, $df=7$, p less than .001). The strength of the relationship observed was strongly positive (Cramer's $V=.48237$) and in fact, was the strongest relationship observed in the science interest questions which were cross tabulated with all demographic data.

To the extent these responses may be applied to the general population, several important readership and audience patterns may be observed. A broad spectrum of age and education characteristics were included in the participant group. The education level of the survey respondents was: some high school, 14.3%; completed high school, 15.7%; high school plus technical training, 5.4%; some college, 31.9%; completed college, 15.4%; and post graduate, 17.3%.

The ages of the respondents were 18-25 years, 34%; 26-35, 24%; 36-45, 10%; 46-55, 8%; 56-65, 10%; and over 65, 14%.

Observations of this survey support previously reported research that correlations appear to exist between media-science news use and factors such as education and sex. These relationships did not appear to be significant in the case of some questions, however, such as why people don't read science news.

For the science communicator, several useful conclusions may be drawn from this research and earlier work. Although several new science magazines have cropped up during the past couple of years, many people never read these

magazines. Most people are more likely to read science information in the newspaper. People turn to the print media, which they can leisurely study, for their science information. The broadcast media, however, may serve an important alerting function in science news as well as in other areas.

Individuals are interested in different types of science news. While some people are most interested in research and development news, others are more interested in medicine and health news. Consideration should be given to presenting our research news in more than one science area.

Why Don't People Read?

People who never read science news in magazines or in the newspapers give different reasons for their failure to read. The reasons most often given suggest that articles should be livelier and more interesting. Specifically, they should be more diligent in explaining the relevance of science developments to the individual. Readership studies have suggested that people tend to read information which they consider useful in their own lives.

The potential for increasing science readership and improving public attitude toward science appears to exist. By using the mass media and presenting science information in lively stories, the university agricultural science communicator can increase public understanding of agricultural research and thus help guarantee its continued support by a more informed public.

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