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Expert Systems and the Public Relations Classroom

Patricia Curtin and Glen T. Cameron
University of Georgia

As public relations educators we stress to our students the importance of research to enhance strategic planning and accountability, but tight budgets and time constraints are often obstacles to including a research element in public relatians campaigns classes. New technology may present a solution to this problem, panicularly the growing field of anificial intelligence (AI) computer programs. Although early AI efforts suffered from overly ambitious claims that proved untenable, a more modest branch of AI known as expert systems has proven practicable in such diverse areas as medicine, law, and games playing.*(1)*

An expert system named **Publics***(2)* is used in University of Georgia public relations campaigns classes to help students conduct primary research as a basis for a campaign plan for their client. Although currently available public relations software includes customized relational databases, rnanagement tools, and simulations,*(3)* **Publics** is unique in that it employs AI techniques to support practice-oriented dassroom e~ercises. As an expert system, **Publics** applies rules of thumb to a knowledge base to process information and give advice, much like a human ecpert. Capable of handling conditional or incomplete data, **Publics** justifies its advice by providing its rationale.

The knowledge base employed by **Publics** is built largely on Grunig's situational theory (i.e., most efficient use of camp~ugn resources is obtained if audience subgroups of information are identified and targeted*(4)*) as modified by Cameron and Yang to include valence of support.*(5)* First, the program helps students create a survey by asking them to provide a statement of the issue, which the program inserts in a template of three questions designed to operationalize the variables identified as predictive of information seeking behavior-problem recogmtion, constraint recogmtion, and involvement. The students can then choose additional questions from a menu of demographic factors (age, income, education, race, political orientation, gender), and the program assists in creating custom demographic and open-ended questions (e.g., membership in or evaluation of an organization).

After the students collect their survey responses and key in the data, the program then most resembles a human expert, performing the appropriate statistical computations and evaluating the statistical output by reading F-ratios and cell means to identify active publics and whether such publics support or oppose the campaign issue. The final output is both statistical (e.g., overall mean levels of awareness, information seeking, personal efficacy, and support and frequency tables for each survey item) and in statement form (e.g., "College graduates are an active, supportive public for this issue." Race was not used as a factor in this study.").

One student team researched the issue of building a Habitat for Humanity house in a mostly poor, rural

Georgia county. Using **Publics**, the students designed a survey to identify the key publics among county residents. After analyzing the survey data, the program provided the team with English language statements identifying active publics in support (teens/young adults) and in opposition (wealthy landowners) to the project. Armed with this information, the team designed a campaign directed at these target publics, recruiting teens and young adults as site workers while speaking to civic groups about the positive effects of Habitat projects on property values. The targeting maximized monetary and time effons by concentrating on these key publics.

Observations on Student Use

To assess the feasibility of including a research requiranent in campaigns classes and to determine how well the program functions to fulfill this requirement, we surveyed students (N=32) before and after they used the system and carefully documented the student experience using participant observation techniques.*(6)* We evaluated the following three factors:

1. student and client receptivity to survey research as a tool in developing a campaign plan

2. student and client response over time to AI applications, and

3. utility of the expert system in overcoming time, cost, and complexity barriers to more extensive use of research in public relations campaigns classes.

Survey data indicate that students almost unanimously favor the research requirement for the campaigns course (31 in favor, 1 against). However, the vast majority of students believe use of the expert system should be optional (29) rather than required (1; 2 favored dropping the program). Inferential analysis of responses on a 5-point Iilcert scale of agreement shows that students who have taken a research methods course rate the program's value less highly [with methods course = 3.09, without course = 3.66; $F(1,65) = 3.50$, $p<.05$]. Participant observation log entries suggest that students who have taken a methods course are confidant they can do the required course without the computer, whereas forced use of the program presents these same students with a leaming curve. Students who have not taken a research methods course, however, seem more receptive to the program, because it provides them with a logical and interactive means to accomplish the task.*(7)*

Inferential analysis of the survey data reveals that client approval is a significant factor in student acceptance of the program and its research use [high client approval = 3.57, low client approval = 3.18; $F(1,65) = 2.77$, $p <.10$]. Negative supporting data are contained in the participant observation log: Teams are uninterested in using the program if their clients insist that they already know who their supporters are. In these instances the students often approach the program as a means to study the attitudes of the public dictated by the client rather than to identify key publics. They consequendy are disappointed when the program cannot be tailored for this use, often complaining thatthe survey questions generated are too broad.

A second significant factor affecting student acceptance of the program is their preconceptions of just how intelligent "artificial intelligence" is. Comments recorded in the participant observation log demonstrate that student groups first using the program to construct surveys tend to vary widely in their assumption of program "intelligence," with attitudes usually appearing fairly similar among group members. Inferential analysis of the survey data reveals that those students who believe in the "mystique" of AI are the most disappointed when confronted with the reality [high mystique = 3.00, low mystique = 3.6; $F(1,66) = 9.61$, $p < .01$]. Participant observation log entries illustrate that some student groups are surprised that they need to determine beforehand what issues they wish to survey, that the program is not "intelligent" enough to perform this function for them.

Benefits of the Program

In our experience, use of **Publics** for campaigns class research presents four main benefits. For students who have not had a research medhods course, dhe program provides an organizational stmcture and forces a step-by-step approach to research medlodology. Also, the program provides relatively sophisticated data analyses without requiring the student to have a statistical background, performing much like a statistical expert in practice. The results, therefore, are of more value than if students had simply figured support percentages for different demographic groups. Professors who prefer to give their students a heavier statistical grounding in research can we the interactive feature of **Publics** to teach the statistical principles being used.

The third pedagogical advantage of the program is that the student seems compelled to gather survey results instead of fabricating research data or using intuitive hunches. Anecdotes about data collection episodes and problems underscored the fact that students had actually collected the data. Finally, the system integrates situational theory with valence of support to identify key publics, providing operational definitions of each variable and demonstrating to students how theory is put into practice.

Recommendations for Classroom Use

Our study of **Publics** suggests it can be a valuable tool for making research a feasible part of public relations campaigns class requirements. This study, however, underscores certain factors that can affect its reception and use by students, and based on our experience we make the following recommendations to instructors using this or similar programs. Instructors should continue to stress the value of research as a campaign planning tool and as a means of enhancing the accountability of the public relations field. For thos students who have already taken a research methods course, the instructor should inform them that the leaming curve encountered, will pay off through the rich results available from the program's relatively sophisticated analysis of the data. The purpose of the program should be clearly outlined to help prevent misconceptions that AI programs are capable of more than their particular purpose -- in fact, the AI angle should be downplayed to prevent unrealistic expectations. Using these recommendations, we believe **Publics** can facilitate teaching research techniques, metbodology, and strategy as an integral part of public relations campaigns classes.

Notes

1. W.J.Deetman (1989). New technologies in higher education: Chaos or progress? In Hans Oosthoek & Ton Vroeijenstijn (Eds.), Higher education and new technologies: Proceedings of the Fifth Congress Association for Research and Development in Higher Education (pp. 14). New York: Pergamon Press. P. Harmon, R Maus, & W. Morrissey (1988). Expert systems tools and applications. New York: John Wiley & Sons, Inc. R W. Lawler (1987). Learning environments: Now, Then, and someday. In Robert W. Lawler & Masoud Yazdani (Eds.), Artificial intelligence and education, Vol. l (pp. 1-25). Norwood, NJ: Ablex Publishing.

2. Created by Glen T. Cameron, coauthor of this paper, using EXSYS shell program.

3. See for example Newstrack and PR Works, PR Pro, and John Pavlik's simulation programs.

4. J. E. Grunig (1988, July). Reconstruction of a situational theory of communication: lntemal and extemal concepts as identifiers of publics for AIDS. Paper presented at the meeting of the Association for Education in Joumalism and Mass Communication, Portland, OR. J. E. Grunig & T. Hunt (1984). Managing Public Relations. New York: Holt, Rinehart and Winston.

5. Glen T. Cameron & Jian Yang (1991). The effect of support and personal distance on the definition of

key publics for the issue of AIDS, Joumalism Quarterly, 68(4), Winter.

6. The participant observation log was kept by a graduate assistant who inconspicuously took notes of the students' opinions, reactions, and anecdotes while helping the students operate the **Publics** program.

7. A similar finding is reported by M. P. M. de Goede & D. B. Baarda (1989). Computer aided instruction for designing social research. In Hans Oosthoek & Ton Vroeijenstijn (Eds.), Higher education and new technologies, proceedings of the Fifth Congress Association for Research and Development in Higher Education and the Dutch Association for Research and Development in Higher Education (pp. 143-147). New York: Pergamon Press.

The PUBLICS Expert System

Author: Glen T. Cameron; System Requirements: IBM or compatible computer; 10-meg hard drive; 5.25- or 3.5-inch floppy drive; Price: $195.00 (projected); Date of issue: January, 1992

The Right Brain, Inc. 3901 Drew Ave. South, Minneapolis, MN 55410 (612)929-7890

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