Response to Evaluation of the Hunter Education Program in Virginia

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Abstract: Over the course of 3 years, the hunter education program in Virginia was evaluated to determine its performance, strengths, and weaknesses and to develop recommendations for improvement. Students gained about 16% in knowledge of hunting and hunting safety from the 6-hour course. Observations of dove hunters with and without hunter education training suggested that the hunter education program had no significant impact on hunter behavior. A naturalistic inquiry evaluation of the program, involving analysis of interviews with 57 persons involved in hunter education, indicated program administration, program delivery, and course content could be strengthened. In the years since completion of the evaluation, the hunter education coordinator and his staff have implemented approximately 80% of the 43 suggestions. These corrective measures were made when the program was shifted by the state legislature from voluntary to mandatory and when the person and division within the agency with responsibility for the hunter education program were changed.

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Virtually all public education programs are subjected to objective evaluation today, and hunter education programs are no exception. In 1981, hunter education coordinators were encouraged to conduct a self-evaluation by Evenden et al. (1981). At about the same time, U.S. Fish and Wildlife Service, Division of Federal Aid, guidelines for state hunter education programs authorized expenditures of funds for studies and evaluation. It was under these new provisions that the Virginia Depart-

ment of Game and Inland Fisheries requested assistance from the Department of Fisheries and Wildlife at Virginia Tech for an evaluation of the Virginia hunter education program.

Initially, the evaluation was to address the knowledge gain of students in the 6-hour course and to determine if hunter education improved the behavior of hunters in the field. Our approaches to these challenges were outlined in Bromley and Hampton (1981) and Hampton and Bromley (1982). In this paper, we review these 2 studies and present the results of a comprehensive evaluation of the hunter education program. In addition, we present the use the agency has made of the information gained through study of its program.

Measurement of Knowledge Gain

To find out how much the students learn in the hunter education course, we tested hunter education students before and after the students took the course. Making this apparently simple evaluation was complicated by the need for a reliable and valid test. As reported in Hampton and Bromley (1982), the test that was in use contained wording flaws in 50% of its 50 questions. Item analysis (Nunnally 1978) revealed that 7 questions were either too easy or too difficult. Also, we learned that the test lacked content validity; that is, the balance of the questions did not equate to the balance of material taught in the course. A new test had to be constructed before student learning could be accurately measured (Hampton and Bromley 1982).

With an educationally valid student examination prepared, we determined the gain in knowledge by students who took the 6-hour course. The exam was given to 5 groups of students prior to taking the course and given again at the end of the course. The groups were considered typical of students in hunter education classes in Virginia. The one threat to validity of our measure stems from the fact that the students received the same exam twice. However, we do not consider this a serious problem. A more detailed discussion of threats to validity can be found in Hampton (1987).

The average gain in knowledge from the 6-hour course was 16%. The increase in knowledge about hunting and hunting safety measured by the exam was typical for short courses taught to high school students Dr. Robert (Frary, pers. commun.).

As a result of this test development to accurately measure student knowledge gain, the Virginia hunter education program administrator could and did adopt a better exam. In addition, the exercise to determine the relative weights for the subject matter resulted in creation of a new instructor's manual with better balanced treatment of subjects to be covered in hunter education classes.

Behavior of Hunters in Relation to Hunter Education

Our second major challenge was to attempt to link the hunter education course to performance of hunters in the field. We chose to observe dove hunters at public

shooting areas. We observed the hunters, and later we determined their personal history, including whether or not they had taken a hunter education course. Our study was roughly comparable to the study of duck hunters by Jackson and Norton (1979). By analyzing hunter education literature and interviewing experienced dove hunters, we compiled a list of 37 behaviors that would detract from the performance of a perfectly safe, legal, and ethical hunter. Next, we recruited 20 volunteer observers who were also dove hunters. The observers were trained to spot each of the depreciative acts and to unobtrusively record their observations.

The next part of the system was to recruit and train college students to be interviewers. The interviewers were introduced to the observers so that they would recognize them under field conditions. Interviewers were trained to recognize the gear hunters carried with them, and they were taught how to approach a hunter in the field to gain the needed information. The interview form had spaces for name, address, and phone number of the hunter and for comments on the dress and equipment carried.

On the first 2 Saturdays of the dove season in 1981 and the opening Saturday in 1982, 112 hunters were observed for 30 minutes each. After the season, hunters were surveyed to determine their history with regard to hunter education and their involvement with hunting, as well as information on their age, income, and other standard sociodemographic variables. Buried in the questionnaire was a hunter education examination composed of questions developed for the revised hunter education exam. The questionnaire was produced and administered in accordance with Dillman (1976).

The 112 hunters we observed committed 32 of the 38 possible depreciative acts. The most frequent depreciative behaviors observed involved safety. Almost half of the hunters pointed a firearm at themselves or others and/or used an unsafe way to carry their firearm. Useable questionnaires were received from 79 hunters, yielding a response rate of 70.5%. Twenty-one had taken a hunter education course, with 19 receiving a certificate; 11 had been trained in Virginia. Most had taken the course between 1975 and 1982, and 20% were trained before 1966. Responses of the hunters indicated that they were similar to hunters reported by the U.S. Department of Interior (1982).

The data from the questionnaire was condensed into 33 variables which were tested statistically for relationships with the behavior observed in the field. Hampton (1987) reported the details of the analysis. The essential finding was that none of the variables, including completion of a hunter education course, correlated strongly with hunter behavior.

Significance of the Observational Study

At first glance, the finding that behavior in the field was not correlated with completion of a hunter education course is alarming. But, upon further consideration, we concluded that a course of 6 hours duration would be unlikely to alter

behavior. Further, we believe that short courses in hunter education, even the current 10-hour course, should not be expected to produce safe hunters. All that can be fairly expected from the hunter education program are increases in knowledge and greater appreciation for hunting, wildlife management, and outdoor ethics. It is important that hunter education instructors be realistic in their expectations. For example, the hunter education instructor should not feel personally responsible should one of the instructor's students cause a hunting accident. There are many other influences far more powerful than the hunter education course that determine the behavior of hunters in the field. In the future, with public hunting continuing to be controversial, hunter education courses must be more complete and effective in improving the conduct of hunters.

Comprehensive Evaluation of the Hunter Education Program

When the results of the knowledge gain and behavioral study of hunters were available, we realized that we had some valuable information but that we were not in a position to make recommendations that would assist agency and program administrators improve the program. This unsatisfactory situation could only be changed by gathering data on every aspect of the program. Rather than relying on seemingly endless efforts to quantify every aspect of the program, we chose to conduct a naturalistic inquiry evaluation (Patton 1980).

The naturalistic inquiry model relies on a thorough working knowledge of the educational program by the investigators. Once the investigators know how the program works and who the key players are, interview questions on every aspect of the program are prepared to elicit truthful and thoughtful responses from people involved in the program. In our study, we interviewed 57 people, including administrators, education lieutenants, game wardens, volunteer instructors, public school officials, students, sportsmen/conservation leaders, and outside hunter education experts. With permission, the interviews were tape recorded. Subjects of the interviews were assured that their responses were anonymous. When the study was completed, all the original tape recordings and transcripts were destroyed. The interviewer worked from carefully developed, open-ended questions. These questions were designed to avoid yes or no answers; instead, the questions probed perceptions, feelings, and opinions. The interviews ranged from 20 minutes to 2 hours. The tapes were transcribed verbatim. The responses were analyzed carefully and points made repeatedly by respondents from different interview groups were given heavy weight. The views of persons primarily charged with managing the program were weighted heavily. These views were combined with the judgements of the evaluators to form the foundation for the report.

The final report to the agency covered the purpose of the program, program effectiveness, strengths and weaknesses, administration, paid and volunteer instructors, course content and presentation, instructor training, teaching methods and equipment, and feasibility of an expanded, mandatory course. These findings were

used to support 43 recommendations for improvement. The report was presented to the administrators of the agency and separately to the team charged with managing the program.

Agency Response to the Evaluation

The comprehensive evaluation was conducted just before retirement of James N. Kerrick, who has been the hunter education coordinator since inception of the program in Virginia in 1961. There was considerable pressure to make the program mandatory during the study, and the Virginia legislature since passed a law that requires all first-time hunters over 12 years of age to pass the course before purchasing a 1988–1989 hunting license. In addition to these changes, guidelines from U.S. Fish and Wildlife Service, Office of Federal Aid, for hunter education programs have become increasingly more rigorous in recent years. These conditions contributed to the receptivity of the agency to the recommendations.

One of the main recommendations of the report was to cease running the program through one division (Education) while depending on another (Law Enforcement) for conduct in the field. Another suggestion was to upgrade the pay and status of the hunter education coordinator. Thereafter, it was decided to shift the whole program over to the Law Enforcement Division and to create a new, upper-level management position for the hunter education coordinator. This fundamental shift in management of the program was followed by numerous changes in program management.

The hunter education coordinator has used the evaluation report as a reference guide in his efforts to improve the program. The coordinator also utilized the results of an agency analysis performed by the Wildlife Management Institute to support changes. In the 2 years since the report was submitted, the hunter education coordinator has gone over the recommendations at least once every 6 months to check on progress made. Approximately 80% of the recommendations have been put into practice.

The qualitative approach to program evaluation yielded valuable insights into the hunter education program, many of which would have been difficult to make if the evaluation were conducted by personnel employed by the agency. The evaluation was completed when there was a real need to improve almost all aspects of the program due to the demands created by the new, mandatory equipment. The hunter education coordinator is planning to have another comprehensive evaluation conducted soon after initiation of the mandatory program. We believe that periodic evaluation of a rigorous nature is necessary, especially when fundamental changes are anticipated and after such changes have been made.

Discussion

The evaluation of the Virginia hunter education program helped the agency change the program to meet new and demanding conditions. A key to the success of

the studies and evaluation was the independence of the researchers. Equally significant was the quality of communication that has existed since 1980 between the university researchers and the officials in the agency responsible for conducting the program. The result of this teamwork was a study that changed the way hunter education is viewed and conducted in Virginia.

Literature Cited

Bromley, P. T. and E. L. Hampton. 1981. Considerations in evaluating education programs. Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 35:689–694.

Dillman, D. A. 1976. Mail and telephone surveys: the total design method. John Wiley and Sons, New York. 325pp.

Evenden, F. G., G. B. Boyd, and R. G. Nelson. 1981. Hunter education in the United States and Canada with recommendations for improvement. Internatl. Assoc. Fish and Wildl. Agencies, Washington, D.C. 51pp.

Hampton, E. L. 1987. A comprehensive evaluation of Virginia's hunter education program. Ph.D. Diss., Va. Polytech. Inst. and State Univ., Blacksburg. 316pp.

——— and P. T. Bromley. 1982. Student examination in the Virginia hunter education program. Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 36:800–804.

Jackson, R. and R. Norton. 1979. Improving ethical behavior in hunters. Trans. North Amer. Wildl. Nat. Resour. Conf. 44:306–318.

Nunnally, J. C. 1978. Psychometric theory. McGraw-Hill Book Co., New York. 701pp.

Patton, M. Q. 1980. Qualitative evaluation methods. Sage Publications, Beverly Hills, Calif. 379pp.

U. S. Department of the Interior and U. S. Department of the Census. 1982. 1980 National survey of fishing, hunting, and wildlife-associated recreation. Superintendent of Documents, U. S. Gov. Printing Off., Washington, D.C. 156pp.