DOCUMENT RESUME

ED 077 798 SO 005 658

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TITLE Public Education as an Approach to Future Planning for Pollution Abatement.
PUB DATE 27 Aug 72
NOTE 11p.; Paper presented at the Annual Meeting, Rural Sociological Society, August 27, 1972

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Attitudes; Citizenship Responsibility; *Educational Needs; Environmental Criteria; *Environmental Education; Environmental Influences; *Health; Physical Environment; *Pollution; Public Affairs Education; *Public Opinion

ABSTRACT

One approach to the abatement of pollution is that which stresses that an informed public will, because of an altruistic motive termed "civic responsibility," control the disruption of the environment, before such disruption reaches a perceived 'crisis' state. This paper discusses the public approach to pollution abatement in terms of long-range or future planning. Studies conducted to determine public attitude reveal that awareness of pollution varies to an extensive degree; the presence of pollution does not insure that the public is aware of the full extent of environmental disruption or potential hazard. Lack of communication between the public and scientific experts may be a result of incomplete data, of government control, or of failure to interpret technical jargon. These issues are further complicated by a lack of civic responsibility: when individuals are aware of pollution, failure to report it or complain about it is due to: 1) poor attitudes about any response to a report; 2) a lack of public leadership; and 3) a lack of knowledge about where to register reports. Pollution abatement will only be effective through coordinated efforts of planning and implementation by public leaders and any change will be gradual. (Author/JMB)

PUBLIC EDUCATION AS AN APPROACH TO FUTURE PLANNING FOR POLLUTION ABATEMENT

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Paper Presented at the Annual Meetings of the
Rural Sociological Society
August 27, 1972

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Introduction

One approach to the abatement of pollution[1] is that which stresses that an informed public will, because of an altruistic motive termed "civic responsibility," control the disruption of the environment, before such disruption reaches a perceived "crisis" state. The two methods of arousing public concern would be to inform the public-at-large (especially through the mass media) and to stress civic responsibility. I have termed the approach, "public education," as the key to the above efforts is informal persuasion (for reference, see: Alexander, 1971).

The purpose of this paper is to briefly discuss the public education approach to pollution abatement in terms of long-range or future planning.[2] The method is to present the findings of recent attitude studies concerning pollution and to then apply the findings to an assessment of the public education approach.

Public Awareness

An "informed public" is defined to be one which has achieved various levels of increased awareness about a social problem through public education.

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[1] "Pollution," unless otherwise qualified, is used in a general sense, without reference to a specific type (e.g. air, water, noise).

[2] Long-range planning is defined as planning to achieve the necessary social changes to prevent a future crisis.

Greater awareness of the problem of pollution brought about by increased education of the public prompted Udall (1969) to note that the "quiet crisis" is not quiet any more. Attempts at such education range all the way from local campaigns to nationally oriented activities such as "Earth Day."

I do not think that anyone would argue against the premise that generally the public has become increasingly aware of pollution. There is reason to believe, however, that the public may not be as aware of pollution as proponents of the public education solution might suggest. Indeed, the issue of "degree" of awareness is very complex, as is evidenced by perceptual differences among individuals.

Summarizing a series of attitude studies conducted by the U.S. Public Health Service, de Groot (1967) concluded that people are less likely to perceive air pollution as a problem in their own neighborhoods than in the community-at-large. De Groot noted, however, that these studies failed to take into account variability in residential pollution. Nevertheless, in a later study, Rankin (1969) controlled for variable residential pollution and confirmed the de Groot analysis. A psychological reason for the above findings was posited to be the apparent operation of a subtle "denial mechanism," whereby people simply did not want to admit that their area of residence was polluted. De Groot (1967: 680) attempted to explain why:

> It would demand the respondent to make a decision about whether air pollution was sufficient cause for him to move out of the neighborhood and uproot his friendships and usual patterns of life.

Another possible reason for differences in perception of pollution could be that the pollutants in certain residential areas cannot be easily perceived by the senses. Studies by Smith, Schueneman, and

Zeidberg (1964), de Groot and Samuels (1966), and Stalker and Robison (1967) were able to correlate public awareness with visual perception of pollution. In all three cases, a direct relationship was found between perceptions of the seriousness of air pollution and the actual ambient air quality in an area of residence. A pollutant such as radiation, which cannot be sensorially perceived, might not be interpreted by the public as a nuisance, even though such a pollutant may be present in large and possibly dangerous quantities (for reference, see: Gofman and Tamplin, 1971).

A final possibility for differences in perception might be related to differences in population characteristics. The literature, however, is somewhat contradictory in this respect. Smith, Schueneman, and Zeidberg (1964) found sex and social class to be important factors in differentiating attitudes about pollution. De Groot and Samuels (1966), however, found no significant attitudinal differences between persons on the basis of sex, age, education, and social class. Crowe (1968) also failed to find differences in awareness attitudes on the basis of sex and residence; however, he was able to establish perceptual differentiation in terms of education and social class.

What is important from the above discussion is that awareness is a complex issue. The operation of the "denial mechanism," the inability of sensorial perception of all pollutants, and the variability in perception based on population characteristics all contribute to a lack of uniformly salient perception by the public-at-large. The actual presence of pollution, therefore, does not insure that the public is aware of the full extent of environmental disruption, nor of its intricate possibilities as a health hazard. Given this lack of uniform-

ity of awareness and the consequent variability of public attitudes, public education becomes a very difficult task.

A Remedy to Unawareness: Public Information?

Writers, such as Gillman (1970) and McKee (1970) have described the public perceptions of pollution as incorrect and incomplete. McKee assigns the "cause" for the lack of correct public knowledge to a failure in communication between scientific experts and the lay public. As an example, McKee (1970: 792) notes that:

> Biologists talked among themselves for many years about the long-term detrimental effects of pesticides, but it took Rachel Carson's book Silent Spring to bring this problem to the attention of anyone outside the circle of experts.

McKee notes that the end result of this "communication gap" is a lack of effective future planning for abatement, which in turn forces people to only act out of emergency, once they have finally perceived a crisis.

The difficulties of informing the public are further complicated by incompleteness of information. This again can be due to a failure of communication of technological jargon to the lay public; however, one must be cognizant that biological and physical data are often lacking in terms of empirical closure. Much hypothesizing about the functioning of complex bio-physical systems is based on pure speculation. For example, Gofman and Tamplin (1971) note that current standards of radiation allowed into the body are not considered by many scientists to be of "short-run" harm to humans. However, there is no conclusive data concerning the "long-run" effects of the present radiation standards.

Whereas incomplete information can often be attributed to lack of information, it might rather be due, in some cases, to a reluctance on

the part of government authorities to inform the public of information that is at hand. As an example, Benjamin (1971) reported that the federal government is withholding information on the extent of pollution by industrial waste dischargers, who hold federal permits to pollute water.

The above issues, which inhibit dissemination of public information become further complicated by a lack of "civic responsibility."

Civic Responsibility

If people are aware that there is a pollution problem, the public education approach suggests that the public will act toward solving the problem.

The evidence suggests, however, that in spite of increased public awareness, people are not willing to make the necessary sacrifices to control pollution, unless they actually perceive it as a crisis in terms of adverse health effects (for reference, see: de Groot, 1967).

The question arises as to what are the reasons that people do not take action in advance of perceived crisis.

Reichardt (1970) suggested two possible reasons why persons fail to effectively organize to reach common solutions to pollution. The first is that individuals differ in their perceptions of what constitutes a crisis. A good example of this is the current controversy concerning "over-population."

By restricting himself to the United States, as a geographic boundry, Wattenberg (1970: 18) fails to denote a crisis situation:

> The critical facts are that America is not by any standard a crowded country and that the American birth rate has recently been at an all time low. . .

Ehrlich (1968) would tend to agree that the United States, if isolated

from other countries, would not be in a state of crisis. However, by taking an internationalist viewpoint, he does not view the U.S. in a geographic vacuum and thus perceives the whole world in a population crisis: "...the world, especially the undeveloped world, is rapidly running out of food" (Ehrlich, 1968: 36).

Even when arguing for a lack of perceived crisis, most writers would agree that the pollution situation in the United States is far from ideal. Such an argument suggests that the alternative is not between "life and death." Rather, the question becomes one of optimum "quality of life." Entering into this discussion is the second reason for lack of effective organization, as posited by Reichardt--that of variation in adaptation to poor environmental quality. There is evidence to suggest that such variation in adaptation is not attributed so much to physiological factors as to social factors. Thus, the notion of "social trade-offs" becomes an important variable.

Trade-offs are taken into account by each individual when he tries to deal with pollution abatement. Creer, Gray, and Treshow (1970) hypothesized that the greater the economic dependence that one has on the source of pollution, the less concerned that person is going to be about controlling pollution. Indeed, pollution might be seen as a problem, secondary in importance to other social problems. In a study of the greater Johnstown, Pa. area, Crowe (1968) noted that air pollution was relegated to fourth place by the public on a list of social problems. Notably, unemployment was listed as the most serious problem. Therefore, in a social trade-off between employment and pollution abatement, one can speculate that the greater value of Johnstown citizenry

would be placed on employment. In other words, a Johnstown wage-earner, who is well aware of his industry's pollution, is likely to keep his mouth shut, when faced with the alternative of losing his job. It should be noted, however, that Johnstown values are not universal. In a study of Charleston, W. Va., Rankin (1969) noted that a majority of his respondents would be willing to see pollution abated, even if it meant greater unemployment.

A third reason for lack of civic action involves pessimistic attitudes. Ninety-five per cent of the Rankin sample felt that their complaining about pollution to authorities would be ineffective. The end result of these feelings of pessimism is extreme apathy and weak anti-pollution lobbies in government (see: Downing, 1970).

Not totally unconnected to the third reason, and indeed at least partially responsible for public pessimism, is a fourth possibility--a lack of public leadership. De Groot (1967) noted that concern among leaders with other social problems, such as crime and unemployment, has taken precedent over concern about pollution. Rankin (1969) tied in the lack of effective leadership with public pessimism by noting that apathy was a result of unfulfilled expectations, whereby political promises are not totally met by practice. As the public becomes more aware of efforts by government to control pollution: "Awareness of improvement may become a more important issue than awareness of pollution" (Rankin, 1969: 598).

A final reason for lack of public action, which Rankin (1969) also ties in with public pessimism, is a lack of knowledge on the part of people of where to complain. Not only are many people unaware of the

extent of the pollution problem (re: de Groot, McKee, etc.), but they are unaware of who makes decisions about abatement. As Rankin (1969: 569) noted: ". . .the average citizen, while recognizing the problem, was unfamiliar with what could be done, or what has been done, and appeared . . . pessimistic regarding his own role and the likelihood of control."

Conclusion

It should be obvious from the above discussion that the public education approach to pollution abatement is not an overwhelmingly efficient alternative for future planning. Any assumption that the public will become uniformly and saliently informed through greater mass communication is not borne out by research. It is also a false assumption that a public (given increased general awareness) will, through some altruistic value called "civic responsibility," move toward controlling pollution, short of a perceived crisis.

Because one cannot perfectly predict into the future, he must allow for the plausibility of public education becoming a more efficient approach at some later date. However, it should be obvious that any change brought about by public education alone will be very gradual, and the severity of the pollution problem calls for more immediate action to prevent crises.

Pollution abatement will, in my opinion, only be successful through some coordinated effort of planning and implementation by public leaders. The methods of achieving such a coordinated effort serve as alternatives to the public education approach, but are not the subject of further discussion in this paper.

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