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# Technical Report

39

WP 1975/96

WP96  
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1975  
(96)



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THE COMMUNICATION EFFECTS GAP:  
A FIELD EXPERIMENT ON TELE-  
VISION AND AGRICULTURAL  
IGNORANCE IN INDIA

by

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T. R. No. 95

Dec. 1975

No. 16

To  
Chairman (Research)  
IIMA

Technical Report

Title of the report The Communication Effects Gap; A Field Experiment on Television and Agricultural Ignorance in India

Name of the Author P.M. Shingri & Bella Nady

Under which area do you like to be classified? Communications

ABSTRACT (within 250 words)

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THE COMMUNICATION EFFECTS GAP: A FIELD  
EXPERIMENT ON TELEVISION AND AGRICULTURAL  
IGNORANCE IN INDIA

by

P.M. Shingi\*  
Bella Mody\*\*

Introduction

This paper attempts to interpret a part of the findings of a communication experiment (Shingi and Mody 1974) carried out in India in light of the communication effects gap hypothesis. When this study was undertaken in 1972, we had only intuitively thought in terms of Who Gained from TV — the better off or the weaker sections, the media haves or the media have-nots, and therefore, analysed our data to explore this dimension, but this was not our chief research interest. Given the slow transit of only limited journals to India, it was only much later that we heard of studies primarily designed to investigate such a hypothesis.

First, then, we will briefly outline the original purpose of the larger study before going into a statement of the communication effects gap. Information-giving, as is well known, is a very vital activity of extension work. Besides being time-consuming, it requires a tremendous amount of investment. Where a premium is placed on conveying given information intact to large audiences, the possibility of distortion and loss of information in transmission and/or in reception has serious implications for any communication strategy and particularly serious implications for planned change efforts. Despite this realization, there has been a paucity of efforts to identify such factors, particularly with reference to mass communications. This study was an attempt to fill this gap.

It was primarily an attempt to identify sources of information loss and accordingly provide guidelines for broadcasting project managers. The data reported here are only part of this study.

This article reports the nature of agricultural information distribution, the nature and extent of distortion and loss of information in knowledge and understanding of farmers when exposed to agricultural television programmes, and the degree of association between such distortion in knowledge and farmers' background characteristics to indicate who gains most from community television and to explore whether it is, in fact, another bourgeois medium or whether it is inherently capable of being a medium for the weaker sections.

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Recent research in the U.S. (Tichenor, Donohue, and Olien, 1970 1973; Rogers, 1974; Galloway, 1974) mainly centered around the issues of perceived inequalities - the knowledge gap - created by existing information delivery systems. The recent work of Tichenor and others is worth considering here. On the basis of a review of relevant communication research, they have come out with an interesting hypothesis that "as the infusion of mass media information into a social system increases, segments of the population with higher socio-economic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease" (Tichenor and others 1970:) Though the sources of data used to formulate this hypothesis were mainly from United States, the authors also stated that a widening knowledge gap may be occurring in developing nations as a result of the system for delivering information to people.

The predicted knowledge gap, according to them, would appear and widen with increasing levels of media input because of (a) differential levels of communication skills, (b) amount of stored information or existing level of knowledge resulting from prior exposure to the topic (such receivers of communication would be better prepared to understand the communication), (c) relevant social contact (a greater number of reference group and relatively more interpersonal contact), and (d) selective exposure, acceptance and retention of information. Thus, to the extent that communication skills, prior knowledge, social contact or attitudinal selectivity is engaged, the gap should widen, as heavy mass media flow continues.

This is not terribly surprising for those in developing countries like India who know that most benefits have tended to accrue to well-off segments rather than the down-trodden for whom they may have been ostensibly intended. A much-talked of case in point is the so-called Green Revolution that benefitted the large farmers and widened existing gaps. Given their better knowledge levels, capital levels and social contact levels, it is not surprising that the "haves" are better equipped in terms of access and utilisation to most personal and mass media information sources.

Those media (radio, press, private TV, cinema) that demand education and/or income for ownership and exposure naturally reinforce knowledge inequity, particularly in developing societies characterised by the lopsided distribution of both education and income. It will come as no surprise to know that exposure to all media in India is concentrated in the urban areas. Also, illiterates, women, those in the below Rs.200 per month income group, workers, and those over 44 years of age, have lowest media exposure in their respective groups (OR Group 1971).

In the light of the above, community-TV<sup>2</sup> that is theoretically accessible to low-income, low-caste, low literacy groups assumes a very important role in India. The analysis of Tichenor and others had concentrated mainly on the print media. However, they seemed to be aware that the same findings may not apply to learning from television. Due to lack of any empirical study, they have only mentioned of the possibility that television, unlike print, may be a knowledge leveller in some areas. The analysis of our data probes into this: whether or not television does perform such a levelling function. It must be remembered that we are referring to rural TV sets owned by the village and placed in a public buildings where all castes and classes have access to it. Where private ownership of TV sets is concerned, the situation will definitely differ.

#### Field Experiment

To assess information gain and the extent of information loss and distortion of televised information, and to identify responsible factors, it was decided to conduct a field experiment in telecast villages using a before-after design.

All India Radio (AIR) Television Centre telecasts the Krishi-Darshan programme thrice a week, on Monday, Wednesday, and Friday. Since the Wednesday programme was a question-and-answer session, the regular Monday and Friday evening Krishi-Darshan telecasts scheduled during the period of our stay in the villages served as experimental treatments; no manipulation was introduced. Monday's 20 minute programme dealt with potato farming; Friday's 20 minute programme was on the late-sowing of wheat after the harvesting of vegetables and sugarcane. A couple of days before the two telecasts, scripts written by the agricultural scientists were made available by the Television Centre to enable formulation of programme content-related questions for this study.

The Najafgarh block in Delhi Union Territory was the location of this study. In consultation with the Block Development Officer, Najafgarh, an attempt was made to select villages for this study using four criteria. First, the receivers in these villages must be functioning properly. Second, these villages must preferably be those farthest away from Delhi city. Third, these villages must have good Krishi-Darshan attendance records. And fourth, no television research should have been carried out in these villages previously. Bearing in mind these considerations, teleclub villages, Ambarhai, Mitraon, and Dindarpur were finally selected. To compare agricultural knowledge levels of farmers in teleclub villages with no television, Surhera village was included in the sample. This village served as a control village.

Initially, a list of farmers who regularly attended the Krishi-Darshan programme in these three villages was prepared in consultation with the village head and convenor of the local teleclub. The teleclub register, maintained to record the proceedings and attendance of each teleclub meeting, was also extensively used in preparing and verifying the list, wherever possible.

To make provision for unforeseen reasons which might considerably reduce the attendance figure for the experimental programme, it was decided to interview a large number of farmers in the before-experiment exposure condition to ensure sufficient sample size for the post-exposure part of the study. Accordingly, all the listed teleclub farmers available at the time of inquiry, were interviewed in these three teleclub villages to bring the total number of pre-test interviews to 80. In addition, 23 farmers were randomly interviewed in Surhera, the control village. Thus, the total pre-test sample size for this study was 103.

Of the 80 farmers interviewed in the teleclub villages, those who attended the telecasts under study were re-interviewed. Due to a sudden death in television village Ambarhai, the community receiver was not switched on at all that week, for which reason 15 pre-tested Krishi-Darshan viewers had to be dropped from the post-test second phase of our study. This brought the post-test sample size down to 65. Further, 17 respondents who were pre-tested did not attend any of the television programmes under study. So the post-test sample size was further reduced to 48. Of these 48 post-test respondents, 41 watched the first programme on potato cultivation, 37 watched the second programme on late wheat cultivation, and 30 watched both the programmes.

Since farmers from the control village did not watch these programmes, they were not re-interviewed.

The questionnaire, written in Hindi, established a pre-programme knowledge base level and included questions on caste, age, education, marital status, educational aspirations for children, social participation, contact with change agency, land owned, and ownership of agricultural implements.

To measure increment in knowledge after viewing the telecasts and loss and distortion of information presented in the programmes, among the television villagers, programme content-related questions were repeated to the 48 respondents who attended one or both programmes on Saturday, the fifth day after exposure to Monday's potato programme and the first day after exposure to Friday's wheat programme.

The post-exposure schedule included questions on the information presented in the telecasts, programme characteristics, the viewing situation, media preferences, family income, ownership of material possessions, and leisure-time activities.

Both telecasts were taped to enable subsequent content analysis.

Dependent Variable: Agricultural Ignorance

Harnessing the land is an instinctive and early response of man trying to survive. Knowledge about farming is a first necessary condition for occupational socialization and success and its lack, i.e. ignorance, has to a great extent been responsible for continued deprivation and often times, exploitation.

Traditionally, the majority of diffusion studies have been content to substitute the easily measured concept of awareness for that of knowledge. The empirical definition of awareness has been restricted to "have you heard of..." kinds of questions. Most diffusion researchers have correlated this restricted concept of awareness with farmer-variables, without investigating the depth of such awareness and its conditional association with adoption.

Attempting to refine earlier gross conceptualizations, Rogers (1971) differentiates between three types of knowledge: awareness-knowledge, "how-to" knowledge, and principles-knowledge. Awareness-knowledge consists of information on the existence of an innovation. "How-to" knowledge consist of information necessary to use an innovation properly. Principles-knowledge deals with the basic facts underlying an innovation. The long-range competence of individuals to judge future innovations is facilitated by information on principles and knowhow. To date, no diffusion study has taken the depth and adequacy of information into account when developing farmers' information profiles that are used to predict innovative behaviour.

Here, "knowledge" is considered as possession of full, accurate, in-depth information; ignorance is defined as the lack of knowledge.

Operationalization of the Dependent Variable

The dependent variable in this study is the level of ignorance of agricultural information at the individual level. Since the major aim here is to explain differential levels of ignorance and locate responsible factors, the dependent variable was formulated in terms of farmers' responses to questions dealing with aspects of two local agricultural practices. These two practices form the subject-matter of the two programmes that were selected as experimental treatments.



The questionnaire investigated 47 items of information through 32 questions prepared on the basis of scripts supplied in advance by the AIR TV centre. The questions dealt with other items and agricultural practices in addition to the two practices mentioned earlier to disguise the purpose of the inquiry, lest the investigators' expectancy communicate itself. Incorrect answers were given a negative score.

However, the content analysis of the taped telecasts revealed that some of the items of information which were provided in the script were not included in the final presentation because of time constraint. Furthermore, some of the information was not presented in the same format as was in the script on the basis of which our questions were framed. As a result we had to delete those pre-test questions which were not covered in the telecast or were covered in a different format. Thus the number of items common to both pre-test and post test questions came to a total of 23. Scores on the total of 23 items constituted a composite index of the farmer's level of ignorance. The 23 item-scale had 13 late-wheat cultivation items and 10 potato cultivation items. These items are listed in Table 1. The 23 items were summed to obtain a continuous dependent variable. As a matter of fact, we used three different dependent variables consisting of these 23 items. These dependent variables were the level of ignorance before the experiment, lack of learning and gain in knowledge after the experiment.

(Table 1 around here)

Since the major interest of the investigation lay in the contribution of agricultural television to reducing the level of ignorance, no test of unidimensionality was required. However, the dependent variables were tested against the measures of dispersion to determine its distribution-suitability for statistical analysis. Pearsonian zero-order correlation were mainly used to express associations between the independent and dependent variables.

#### Impact of Television Exposure

Post-television information gain, i.e., farmers' increment in knowledge (accurate recall of televised items not known before) and the extent of information loss (no recall or distorted recall of televised items not known before) were assessed by repeating base line questions. The effect of the sample farmers' exposure to television is given in table 2. As can be seen from this table, the target audience already knew 62 per cent of the sampled information televised on wheat, and 50 per cent of the sampled information televised on potato. On the average, about 45 per cent of the televised information was not known to sample cultivators before television programme exposure. In other words, there was scope for television viewers to learn 10 items of information. Approximately

four were learnt. Of the remaining six that were not learnt, one item was not remembered at all, while five were inaccurately recalled.

(Table 2 around here)

From the chart below, it may be seen that a single half-hour programme reduced 40 per cent of the farmers' ignorance. Nonetheless, an unfortunate fact is that 60 per cent of the new information presented to farmers was "lost" for all practical purposes.

I Pre-exposure	II Exposure	III Post-exposure
100% inaccurate information pre-TV	TV presents 100% accurate information	40% accurate information learnt 50% information recalled inaccurately 10% information not recalled at all

Given the important implications of communication exposure, it is imperative that information distortion and loss be reduced and learning maximized. The questions then are: one, why was there 60 per cent information loss? Can it be attributed to limited learning capacity of the viewer or is it because of message-preparation and message-reception conditions? And two, who gained most from the exposure to agricultural television? To identify the factors responsible, the correlates of the effectiveness and lack of effectiveness of the two tested programmes were analysed.

#### Receiver Variables and Lack of Learning

To relate the lack of learning of new televised information with individual differences, zero-order correlations were run. Table 3 gives the individual characteristics of the experimental group, who watched both the selected television programmes, as related to their scores on items not learnt after TV exposure. As can be seen from this table, the lack of information acquisition was not a function of the age of the viewer-respondent ( $r = .07$ ), or his level of education (.06), score on functional literacy (.15), participation in social organizations (-.23), exposure to various mass media, change agency contact (-.07), ownership of agricultural implements (-.24) or land (-.30), level of living (-.17), annual farm income (.07), and even his pre-programme level of ignorance (.25). The statistics consistently indicate that the 60 per cent loss of information is not attributable to the individual characteristics of the target audience. The reasons for loss of information must be sought in factors other than individual differences.

(Table 3 around here)

However, at least one variable, viz., knowledge level of technical terms, of which no cognizance has been taken so far, was significantly associated with lack of information acquisition. A negative correlation ( $r = -.57$ ) between these two variables indicates that viewer-farmers who had poor knowledge of technical terms learnt less from the televised programmes. This portion of the data seems to be in agreement with Tichenor and others about one of their contributory reasons why the predicted knowledge gap would appear. One factor they have mentioned is communication skills. In case of farmers who were able to decode the technical terms the lack of information acquisition was low. Since knowledge level of technical terms relates to message preparation, a detailed elaboration of this variable is in order.

To assess the viewer-farmers' level of knowledge of technical terms commonly used in television programmes, 13 technical terms used in the treatment programmes were selected through content analysis. These technical terms included words like hectare, centimeters, meter, litre, acre, khariif, rabi, kilogram, October, per cent and so on. Each respondent was asked to indicate the meaning of these terms.

Ignorance per term ranged from 23 per cent to 92 per cent. For the 48 farmers who saw both the programmes, the mean ignorance of the 13 selected technical terms used in the programmes was 7.54. In other words, an average farmer-viewer did not know the exact meaning of about 58 per cent of the technical terms that were used in the selected programmes.

Agricultural television is mass communication that caters to the needs of farmers coming from diverse cultural backgrounds. Therefore, a TV programmer may be constrained to use a uniform technical and scientific language. In that case, farmers should be trained and educated in the basic concepts of such language use through special programmes. As the results of this study show lack of proper understanding of these concepts was significantly associated with lack of learning.

To continue with receiver-variables, the next variable analysed was message relevance. A steel worker may not be interested in paper-making procedure. It was hypothesized that learning may not take place, if sample farmers perceived the selected practices as not relevant. Were these two practices not relevant to the farmers? How many of them did not grow potato and wheat? Were they interested in these programmes?

Only 22 per cent of the farmers did not grow wheat and 24 per cent did not grow potato. Similarly, only 32 per cent of the farmers were not interested in the wheat programme and 29 per cent were not interested in the potato programme. In other words, both the selected programmes were relevant to the needs of the sample farmers and a majority of the farmers were interested in these programmes. Therefore, lack of learning cannot be attributed to the absence of message relevance.

Could it have been that physical handicaps like poor eyesight and hearing were handicaps to information gain? The data showed that the number of farmers with these handicaps was negligible.

Considering that sowing operations for the winter crops were in full swing and fields were being irrigated at night when these programmes were televised, the farmer-viewer could have been sleepy and tired while watching the programmes!

Fatigue was reported by a substantial number of farmers in each telecast audience. This may be yet another reason for information loss. The data also indicates that those wheat programme watchers who were sleepy and tired gained less from the telecast. This is a big scheduling problem for the educational television manager who has little choice for the most part, since the farmer is in the fields all day and returns home only when his work is done; then it is dusk and he is tired and sleepy. In such a situation, the challenge has to be taken up by the producer who must "educate" in an interesting non-soporific manner, bearing in mind his drowsy audience. It is assumed that professional educational broadcasters take such factors into account when scheduling programmes that require alert audiences.

In short, it was noticed that lack of information acquisition by and large, was not attributable to receiver variables. However, farmer-viewers' level of understanding of technical terms used in the programmes, and fatigue were found to be related to lack of learning.

Medium for the Weaker Sections: Which Farmers Gained Most from Agricultural Television?

Given the farmer-viewers' previous levels of knowledge, what are the factors associated with the amount of new information gained from each of the two selected telecasts? Zero-order correlations were run to explore the relationship of viewer factors with farmers' information gain (Table 4). For the 30 farmers who saw both the programmes, post-exposure information gain was significantly but negatively associated with the degree of their involvement in social organizations ( $r = -.37$ ), exposure to radio ( $-.49$ ), and the number of agricultural implements owned ( $-.43$ ). In other words, those who were not well-established in organizations, had limited exposure to radio, and owned less resources gained more from the agricultural television programmes they saw, perhaps because their lack of other contacts increased their need for this source of information, freely available to all strata. A lack of correlation between the amount of information gained and the rest of the individual variables clearly suggests that irrespective of their age, level of education, functional literacy, exposure to various communication media, degree of contacts with change agents, and resources, the farmers learnt (although a limited quantity of information) from agricultural television.

Learning and not learning from TV had no significant association with the income or size of the land-holding of farmers. The benefits of this medium accrue to the big farmer and the small farmer alike, while purchasing power and social position mediate exposure to communications from other mass media and membership in organizations. Thus, agricultural television seems to have the potential capacity of equalizing inequalities in occupational information distribution.

Further, it seemed probable that those who had better basic knowledge on potato and late-wheat cultivation would be better prepared to assimilate and recall the televised information on these subjects. Or, was it possible that instructional television would serve as the leveller here, neutralizing the effects of initial disparities in information levels? To explore this, the farmers who saw both programmes were divided into two sub-samples, those high on pre-exposure ignorance and those low on pre-exposure ignorance so their post-television levels of ignorance could be compared. Table 5 gives the actual information gain for farmers with different levels of pre-programme ignorance.

(Table 5 around here)

Contrary to intuitive predictions, those who were high on ignorance before the programmes benefitted the most, in absolute terms, from the television programmes. Correlation analysis in Table 4 ( $r = .56$ ) confirms this finding. However, this could be because of the fact that the information gain potential of farmers high on pre-exposure ignorance was greater than that of the group with a low-ignorance level. The study also indicated the limited access of the group with a high level of ignorance to other sources of agricultural information: high pre-programme ignorance was found to be significantly associated with high age, low education, low organizational participation, low media exposure, and low change agency contact. Economically and socially weaker sections are also characterized by information and media poverty.

This discussion, however, indicates that television does not discriminate between the socially powerful and the economically poor. It seems to be an equalizing tool. Action is recommended to ensure that this high-need population segment, that benefitted most from the selected programmes, is attracted to attend Krishi-Darshan regularly. The tragedy of it is that, as of November 1972 and till today, those with higher education, higher reading ability, higher exposure to other media, and higher level of living (half of whom were already well-informed and had less need for the information) attend Krishi-Darshan more frequently than those with less education, less reading ability, limited exposure to other media, and lower level of living ( $r$  values being .40, .38, .39 and .42 respectively).

In spite of the higher information-gain of the pre-television high-ignorance group compared with the information-gain of the pre-television low-ignorance group, levels of ignorance prevailing post-television indicate that quite naturally, initial differences in information between the two groups were not totally equalized after exposure to only one telecast, although the gap was narrowed substantially. Those in the low-ignorance group before TV exposure still remained slightly better informed even after television exposure.

To summarise so far, it has been shown that approximately 40 per cent of the new information presented in two selected television programmes was learnt by the sampled farmer-viewers and 60 per cent of the new information was not learnt. Level of information acquisition and lack of information acquisition were treated as separate variables for analytical purposes. The analysis of the level of learning indicated that those who were high on ignorance before the programmes benefitted most in absolute terms from the television programmes.

### Discussion

A commonly accepted definition of innovative behaviour in the agricultural sphere is the adoption of non-traditional practices. In our opinion, the innovation-decision process is considered initiated not when the individual is merely exposed to information on the innovation but when he gains some understanding of how it functions.

The almost 100 per cent awareness of the existence of practices (the have-you-ever-heard-of type of question frequently used in diffusion studies) had precious little to do with the amount of more relevant "how-to-use" and "why" information on an innovation farmers had, or their grasp of its underlying principles. The long-range competence of farmers to evaluate future innovations is not facilitated by mere awareness of a million and one innovations.

In this experiment, farmer background variables such as differences in education, social position, wealth, and agricultural resources were found not to be related to the degree of knowledge absorbed from the two television programmes. TV producers will not be able to fall back on these excuses to explain away the low success their agricultural programmes may have. And then, there is the promise that such major handicaps will not stand in the way of equitable distribution of instrumental information by a committed ETV system. In fact, the higher the farmer's contact with village organizations and change agents, and the larger his ownership of agricultural implements, the less information gain from TV he showed, possibly because his knowledge level was already high due to his access to other sources of agricultural information.

However, the difference between farmers in familiarity with technical terms used in both programmes was significantly associated with the amount of ignorance left unremoved, even after relevant televised information exposure. The less the knowledge of technical terms the farmer had, the less he learnt from programmes that used such terminology. Through informal conversations with the farmers, it was also noted that the attempted build-up of programme credibility through the staging of scientists, officials, and progressive farmers frequently had a boomerang effect: it risked not establishing rapport with the small and marginal farmer who could hardly identify himself with the big farmer, leave alone understand the fancy jargon of the agricultural research institute. It is, therefore, recommended that low-investment reality-based solutions of the average farmer's problems be featured in non-technical language, utilizing television's visual facility to full advantage.

Given these suggestions, one last question which is important for social planning and policy making remains: who gains from this new investment? Who learns most from agricultural television, the already-knowledgeable or the less knowledgeable? It seemed probable that those who had higher initial knowledge would be better equipped to assimilate additional information. Actually, gain in information was the greatest for the least knowledgeable farmers in the television audience. The important policy implication of this finding is heightened in the light of the fact that these farmers with initial low knowledge do not have access to alternative sources of agricultural information: their high pre-telecast ignorance is significantly related to their low exposure to all mass media and their low contact with village organizations and change agents. Field management of the viewing situation and programming action is recommended to ensure this high-need weaker section that benefits most from agricultural television exposure is attracted to attend regularly. This will also boost the low attendance that plagues agriculture-related TV programmes.

Ironically, the present situation presents a picture of information media concentration and monopoly; the better educated farmer who is highly exposed to the press, radio, and change agents is the more frequent Krishi-Darshan viewer, i.e., exposure to one medium is highly related to exposure with other media. Although this clustering of media exposure is not a new finding, its implications must be fully realized; peasants who are not reached by one medium are not reached by any of the others, resulting in another artificial division of populations, the well-informed class and the unreachable. Television is inherently appropriately suited to reach all shades of mass audiences if the medium is properly managed to this end.

For this capacity of TV to be utilised, the broadcasting organisation must be committed to it. The structure of the organisation, its staffing patterns, equipment, facilities, and even travel rules must express this or appropriate problem solving close-to-the-grassroots programming will not result.

The last decade and half has seen a substantial growth in the knowledge of agricultural technology and improved methods of cultivation in India. Unfortunately, innovative practices born in agricultural research stations do not spread on their own: they require promotion to bring about necessary awareness and interest, preparatory to trial and adoption (Rogers 1962). Small and marginal farmers spread across the country in remote villages must be contacted with an understandable message, relevant to their needs and acceptable in terms of input availability.

At present, agro-information is disseminated chiefly through extension personnel equipped with posters and pamphlets. Weekly programmes for farm audiences are broadcast by All India Radio; some documentaries made by the Films Division are screened by too-few mobile vans requisitioned to cover 560,000 far-flung villages. Television as a medium of information dissemination has unique features and has a marked advantage over other methods of extension, particularly when community ownership is involved. Instantaneous, alive, audio and visual, the potential of the TV medium can be realised only with committed reorganisation of TV programming, appropriate decentralised organisational structures to make this possible, provision of community-sets in villages, management of the viewing-situation at the point of reception and a responsive feedback mechanism that helps programme producers to modify their programming in light of audience requirements, so that this delivery system can perform the functions (gap narrowing) we found it is so uniquely qualified to perform.



TABLE 1

Per cent of Farmers Giving Incorrect Answers  
to Items Included in the Dependent Variable

Selected items	Pre-TV <u>Ignorance</u> % of farmers ignorant	Type of knowledge
Wheat Programme (37 viewers)		
Names of late-wheat varieties		
Sonalika	32	awareness
Sharbati Sonora	30	awareness
Shera	73	awareness
Seed rate for late-wheat and reasons for the same	27	How-to/principle
Reasons for soaking seed overnight	57	principles
Rate of fertiliser usage	59	how-to
Direction of sowing	54	How-to
Reasons for north-south sowing	49	principles
Distance between rows	14	how-to
Depth of sowing	14	How-to
Reasons for spreading dung	46	principles
Date of first irrigation	14	How-to
Date of second irrigation	32	How-to

TABLE 1 (contd.)

Selected items	Pre-TV <u>Ignorance</u> % of farmers ignorant	Type of knowledge
Potato Programme (41 viewers)		
Amount of water needed and reasons for this	37	How-to/principles
Right time for fertiliser application	41	How-to
Name of fertiliser	51	Awareness
Rate of fertiliser usage	61	How-to
Where and how to apply fertiliser	32	How-to
Reasons for method of fertiliser application	41	Principles
Consequences of exposed, uncovered roots	37	Principles
Uses of green potato	46	How-to
Symptoms of potato blight	83	Principles
Cure for blight	73	How-to

TABLE 2

Television Viewer-Farmers' Levels of Ignorance  
Before and After Television Exposure

	Farmers who saw both pro- grammes (N = 30)	Farmers who saw the wheat programme (N = 37)	Farmers who saw the potato programme (N = 41)
1. Number of televised items common to pre-test and post-test	23	13	10
2. Information redundancy (per cent of televised information known to an average farmer before the TV programme)	54.49	61.75	49.76
3. Per cent of televised information not known to an average farmer before the TV programme	45.51	38.25	50.24
4. Actual information gain*	37.58	42.93	36.89
5. Information loss**	62.42	57.07	63.11

\*Number of items learnt after treatment as a percentage of the number of items not known before.

\*\*Number of items not learnt after treatment as a percentage of the number of items not known before.

TABLE 3

Individual Characteristics of the Sample  
Cultivators of the Experimental Group who  
Watched both the Selected TV programmes  
as Related to the Score on Items not  
Learnt after TV Exposure (N = 30)

Variable	Zero-order correlation
Age	.07
Level of education	.06
Functional literacy	.15
Educational aspiration for son	.16
Social participation	-.23
Exposure to print media	-.01
Exposure to movie	-.17
Exposure to radio	.25
Change agency contact	-.07
Agricultural implements owned	-.24
Land owned	-.30
Knowledge of technical terms	-.57*
Exposure to TV per week	.13
Level of living	-.17
Level of ignorance before telecast exposure	.25
Annual farm income	.07

\*Significant at 0.5 per cent level.

TABLE 4

Individual Characteristics of Sample Cultivators  
of the Experimental Group who Watched both the  
Selected TV programmes as Related to Their Level  
of Learning after TV Exposure (N = 30)

Variable	Zero-order correlations
Age	.09
Level of education	.09
Functional literacy	-.14
Educational aspiration for son	-.33
Social participation	-.37*
Exposure to print media	-.09
Exposure to movie	-.21
Exposure to radio	-.49*
Change agency contact	-.02
Agricultural implements owned	-.43*
Land owned	-.10
Knowledge of technical terms	.29
Level of ignorance before TV exposure	.56*
TV exposure per week	-.06
Annual farm income	-.11

\*Significant at .05 per cent level.

**TABLE 5**  
**Information Gain for Different**  
**Levels of Pre-TV Ignorance**

	Low pre-TV ignorance (N = 16)	High pre-TV ignorance (N = 14)
Information gain potential (average no. of televised items not known before the programme)	6	15
Actual information gain (average no. of new items known only after television exposure)	2	6
Information loss (average no. of televised items not known on post-test), i.e., post-exposure level of ignorance	4	9

### Foot Notes

1. Conversation with Everett Rogers in Ahmedabad in June 1975.
2. TV was started in the Capital and was gradually extended to surrounding villages where community TV sets were installed, under the Krishi Darshan (Agricultural View) pilot project. Krishi Darshan was meant to provide insights on hardware, maintenance, software, and other aspects that would help in the design of the Satellite Instructional TV Experiment (SITE) system. SITE is a huge multi-dimensional multi-agency one-year learning experience on how to run a national TV system for development. The SITE delivery system and programme policy has had to cope with the great cultural and linguistic heterogeneity of India. It has to service myriad user-agencies in health, in family planning, in agriculture and in primary education. On August 1, 1975, about 2400 villages from 6 different states became a part of national television network and the SITE program.

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