



Development of electronic media on food preservation - An effective tool for information dissemination

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ABSTRACT

Electronic Media is the heart of modern culture and edutainment. In today's world, media has played an important role in raising our society. Considering the important role played by the electronic media, a research study entitled "Development of electronic media on food preservation - An effective tool for information dissemination." was undertaken with the objectives to find out the effectiveness of electronic media for information dissemination. A close ended evaluation schedule was prepared to evaluate the developed compact disc (CD) as an electronic media. Sixty respondents were selected purposively for the evaluation of the developed compact disc. The main objective of the CD was fulfilled as all the three respective groups gained the required information of importance and need through the CD on food preservation. As a result, it can be concluded from the study that the CD on food preservation had shown positive result for the villagers. CD has played a major role in education of illiterate and semi-literate rural population as an effective electronic media.

1. Introduction

Development communication has two primary roles, transforming and socializing role. Media plays an important role in development communication through circulation of knowledge, providing forum for discussion of issues, teach ideas, skills for a better life and create a base of consensus for stability of the state. From the early stages of the introduction of the media in India, various attempts were made to exploit their potential for development purposes. The history of development communication in India can be traced to 1940's when radio broadcast was done in different languages to promote development communication through various programmes, like programs for rural audience, educational programs and family welfare programs. Today television in our country is also used as a medium for social education, weapon against ignorance and awareness among the people, through different programs like

Educational Television (ETV), Countrywide Classroom (CWC) and Teleconferencing etc. Experiments in Satellite technology has been conducted in recent years to bring social change and development. This has been done in the form of Satellite Television in India Program and Kheda Communication Projects (Eyiah 2004). Electronic Media are products and services on digital computer-based systems which help the users by presenting content such as text, graphics, animation, video, audio and games. Compact disc (CD) is the multimedia CD format specified in 1986. It allows multimedia applications to be played or displaying pictures and sound to a stereo system. CD player attached to a television, personal computer and compact disc players. CD is hardware and software system, a variety of special compression methods for audio-visual data, a method of interleaving audio, video and text data that developed as a user-friendly device which are easier to use and have television video output as well (Rouse 2005; Dix et al. 2013).

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The basic components of a CD include a high level of interface, graphics, audio, video, text, graphics, comprehensive navigation and animation. Effective instructions CDs encourage students for independent learning. The components of a learning CDs include structured interactions that encourage learning but provide flexibility to allow the student to learn effectively. These components make learning adaptable for the user; provide learners individualized pace, content and easy access. The effective use of instruction CDs require high levels of interaction which means high quality and high frequency of interaction, support learning environments, improve the quality of instruction that allow user to get an individualistic approach to the content of instruction increase interest, motivate students to active participation to the instruction, provide discussion among students related the instruction and through these components carefully developed instruction CDs present student centered instruction.

Effective use and choose of CD, learning tools engages students to use new and emerging information and communication technologies. Teachers may use films, slides, overhead projectors and the latest technology in teaching, including computers, telecommunication systems and video discs. The use of computer resources, such as educational software, internet and other devices exposes students to a vast range of experiences and promotes interactive learning. Through the technological opportunities in instructional systems, students can communicate with students in other countries to gather information (Bureau of Labour Statistics 2005; Eristi 2008).

Compact Disc in food preservation is a new technique to show the different processes of food preservation that can help to preserve foods, to maintaining or creating nutritional value, texture and flavour.

The term food preservation refers to any one of a number of techniques used to prevent food from spoiling. It includes methods such as canning, pickling, drying and freeze-drying, irradiation, pasteurization, smoking and the addition of chemical additives. Food preservation has become an increasingly important component of the food industry as fewer people eat foods produced on their own lands and as consumers expect to be able to purchase and consume foods that are out of season (Lerner and Lerner 2003).

Human societies have always faced temporal and spatial fluctuations in food availability. The length of time that food remains edible and nutritious depends on temperature, moisture and other factors that affect the growth rates of organisms that cause spoilage. Newer

technologies developed since the industrial revolution, such as canning and compressed-gas refrigeration, require much greater energy inputs. Coincident with the development of storage technologies, the transportation of food helped to overcome spatial and temporal fluctuations in productivity, culminating in today's global transport system, which delivers fresh and preserved foods worldwide. Because most contemporary humans rely on energy-intensive technologies for storing and transporting food, there are formidable challenges for feeding a growing and increasingly urbanized global population as finite supplies of fossil fuels rapidly deplete (Hammond et al. 2015).

Food preservation is that it permeated every culture at nearly every moment in time. Food preservation enabled ancient man to make roots and live in one place and form a community. Each culture preserved their local food sources using the same basic methods of food preservation. In ancient times the sun and wind would have naturally dried foods. Vegetables and fruits were also dried from the earliest times. Freezing was an obvious preservation method to the appropriate climates. Any geographic area that had freezing temperatures for even part of a year made use of the temperature to preserve foods. Fermentation was a valuable food preservation method. It not only could preserve foods, but it also created more nutritious foods and was used to create more palatable foods from less than desirable ingredients. This produces a more nutritious end product from the ingredients. Pickling is preserving foods in vinegar (or other acid). Spicy pickles are very important item in Indian meal. Pickles enhance the tastes of the meal and increase the satisfaction after every meal. The earliest curing was actually dehydration. Early cultures used salt to help desiccate foods. Salting was common and even culinary by choosing raw salts from different sources (rock salt, sea salt, spiced salt etc.). Preservation with the use of honey or sugar was well known to the earliest cultures. Fruits kept in honey were commonplace and packed tightly into jars. Canning is the process in which foods are placed in jars or cans and heated to a temperature that destroys microorganisms and inactivates enzymes. This heating and later cooling forms a vacuum seal. The vacuum seal prevents other microorganisms from recontamination the food within the jar or can. Some historians believe that food preservation was not only for sustenance, but also cultural. They point to numerous special occasion preserved foods that have religious or celebratory meanings.

Food preservation usually involves preventing the growth of bacteria, fungi (such as yeasts) or other microorganisms as well as retarding the oxidation of fats that cause rancidity. Food preservation may also include processes that inhibit visual deterioration, such as the enzymatic browning

reaction in apples after they are cut during food preparation (Brian, 2002; Msagati, 2013).

2. Materials and Methods

The study was conducted in Allahabad District of Uttar Pradesh which was purposively selected because such kind of study has not been conducted in this area in the past years as well as the researcher was acquainted with the local area and situations so authentic collection of data could be facilitated. The script of the documentary on food preservation was written in vernacular language so that villagers can be benefited. The first part of the script consisted of introduction of food preservation and its importance. An interview on the process of marketing with Mr. Vikash kumar Singh from poorva pratishtan, senior marketing manager was conducted and included in the first part of the script. The second part of the script dealt with the description of food preservation methods. The methods such as canning, pickling, drying and freeze-drying, pasteurization, smoking and the addition of chemical additives. Third part of the script consisted of the processes, uses and techniques of food preservation with marketing strategies. According to the story board clippings for the CD

were shot. Voiceover on food preservation was done in the studio and Cyber Link Power Director software was used for editing of documentary. A close ended evaluation schedule was prepared to evaluate the developed compact disc in terms of six parameters- title, duration, quality of voice, quality of picture, digital effects and subject matter. The pretesting of interview schedule was done by twenty specialist of Ethelind School of Home Science, SHUATS. Sixty respondents were selected purposively for the evaluation of the developed compact disc. The respondents include 20 staff members and 20 students of Ethelind School of Home Science, SHUATS, who had knowledge on food preservation and 20 villagers from Allahabad District of Uttar Pradesh. Among 20 villagers, some of them can read and write and while others cannot. Opinions were obtained by showing the CD to these three different groups. An open ended interview schedule was prepared to evaluate the villagers about effectiveness of the electronic media (a developed CD on food preservation) as a tool for technology dissemination.

As per the requirement of the data, frequency, percentage, one way ANOVA and other appropriate statistical techniques were used. Scoring procedure was adopted to evaluate the CD. Overall effectiveness of CD was measured using five point scale procedure

3. Results and Discussion

3.1. Distribution of respondents according to the parameter subject matter of compact disc

{N=60}

Sl. No	Scale (1-5)	Staff members		Students		Villagers		F cal	F tab
		F	%	F	%	F	%		
1	Excellent (5)	6	30	7	35	13	65	*3.88	3.16
2	Very good (4)	11	55	11	55	7	35		
3	Good (3)	3	15	2	10	-	-		
4	Average (2)	-	-	-	-	-	-		
5	Poor (1)	-	-	-	-	-	-		

*Significant

The above ANOVA table reveals that the calculated value of F due to categories is greater than the table value of F at 5% probability level and on 2, 57 degrees of freedom. Therefore, it can be concluded from the above data on subject matter that there is significant difference between the three groups. Since the category (C2) students were having greater score than the average scores of staffs and villagers because

students stated that subject matter on food servation is interesting and easy to understand which includes importance of income generating activity on food preservation, techniques of food preservation, method to prepare "amla pickle" and marketing of the food preservatives. So there can be greater effect of this parameter on students compared to the two groups (staffs and villagers).

3.2. Analysis of variance of groups (staffs, students and villagers) evaluating compact disc with parameters of CD.

An attempt was made regarding the evaluation of CD by three groups. Their opinion was obtained and data are presented in Table 4.8

Sources of variation	D.f.	S.S.	M.S.S.	F 'cal'	F 'tab'	Result
Due to category (C)	2	13.12	6.56	8.30	2.754	S
Due to error (E)	357	282.63	0.79	-		
Total	359	295.75	-	-		

*Significant

The above ANOVA table reveals that the calculated value of F (8.30) due to categories is greater than the table value of F (2.754) at 5% probability level and on 2, 357 degrees of freedom. This shows that on respective groups (staffs, students and villagers) that there is significant difference between the three groups. Since the students category (C2) were having greater score as compared to the average scores of villagers and staffs. So there can be greater effect of these parameters on students compared to the two groups (villagers and staffs). The order of average values are as C2 (26.6)>C3 (25.05)> C1(23.8).

3.3. An open ended interview schedule was prepared to evaluate the villagers about effectiveness of the Compact Disc as an electronic media in terms of three parameters- user friendly, efficient and portable.

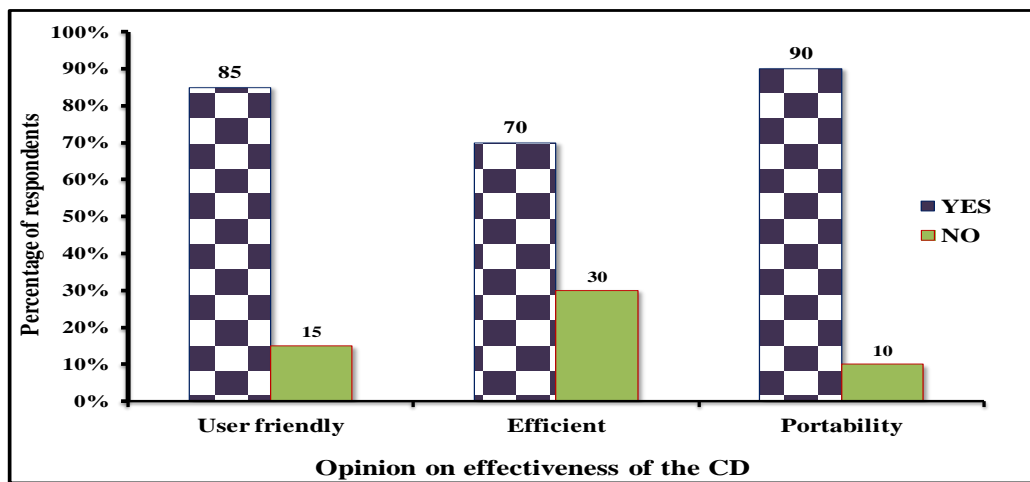


Fig. 1 Distribution of villagers according to their opinion on effectiveness of the Compact Disc as an electronic media

The figure 1 shows that 85 per cent of villagers opined that Compact Disc (CD) is user friendly as they found it easy to understand, easy to run and help them to learn at free time in group or individual manner as well as it improves their self learning skill. As it is an audio-visual medium so illiterate people also found it interesting, entertaining and easy in utilizing successfully. 70 per cent of villagers opined that CD is efficient with adequate and appropriate sequence of content, apparent quality of picture which drawn the attention of the villagers with clear as well as correct voice modulation in short time and low cost. 90 per cent of villagers opined that CD is portable because it is easy to carry, easy to handle, can store for longer period and able to demonstrate in very remote areas to deliver information.

Hence, the villagers found the electronic media was very much effective to disseminate messages to mass audience. For neo-literate and semi literate rural population, it is very much helpful for sharing information among them and has greatest effect in initiating income generating activity.

Conclusions

It is concluded from the study that the parameters of the CD had significant difference among the three groups. CD has played a major role in education of students and villagers. This CD was developed on food preservation. There were significant results for title, quality of voice, quality of the picture and subject matter. The students were having high level of responses to title, duration, quality of voice and quality of the picture than staff members and villagers. The main objective of the CD was fulfilled as all the three respective groups gained the required information of importance and need through the CD on food preservation. To enhance the level of awareness on food preservation, there is a need to produce and publish such type of CDs in large scale by using information and communication technology so that people can get the CD very easily and can utilize the subject matter. The local area should be visited by the experts so that they can judge the local needs and wants and according to that, the CD should be designed to have a better impact on the society and there should be repeat evaluation so that use of information can be maximized.

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