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Video Led Learning for Agri-Nutrition Education: A Participatory Assessment

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ABSTRACT

Health is a core concept for quality life. Today's greatest challenge is to provide sufficient and healthy food to all. There is lack of nutrition knowledge and practices that develop healthy habits. To attain good health, nutrition education has been realised as one of the essential means of helping people to improve and maintain their health. Today electronic media has become an effective tool to impart knowledge. Video based material boost the knowledge and motivate people in developing healthy habits. Educating people with video has been proved to be very effective as it combines the senses of seeing, hearing and text together. Studies have revealed that video extension has the advantage of credibility especially among low literate people. Information has great impact when combined with educational tools. The aim of the study was to assess the effectiveness of nutritional videos among farm women. Semi-structured interviews were conducted among 42 respondents of Lachoda village of Baghpat district to measure the effectiveness of video presentation. The study was carried out by using videos on semi-stiuetined to assess the effectiveness of the method in terms of video content design, logistics and learning out comes. A video programme was specially developed for this purpose. The data were analysed by the specially developed effectiveness index, besides descriptive statistics including mean and standard deviation to assess the level of effectiveness of prepared videos. It was found that the video was highly effective in its all parameters. The content and design of the videos were found highly effective with the effectiveness score 86.71 and 82.90, respectively. Learning outcomes of the videos were also high. After watching the videos, the farm women were in the opinion that they can take care of their family nutrition and they will like to explore more videos on this aspect. The results have indicated more positive attitude of the respondents towards the videos. Overall effectiveness score of videos was found 83.70. It was observed that about nutritional videos have the capacity to increase nutritional knowledge among low literate population, especially rural women.

Keyword: Video led learning, agri-nutrition education, participatory assessment

INTRODUCTION

Learner's needs are the key for effective use of new technologies to support learning (Levine, 1995). Today's greatest challenge is to provide the sufficient and healthy food to all. It is also one of the Sustainable Development Goals. Mainten-ance of a good health is a major social investment. To attain good health, nutrition education has been realized as one of the essential means of helping people to improve and maintain their health. There is an apparent need to develop effective nutrition and health programmes for good health and quality life to all individuals and especially for those who have the limited income (Parker *et. al.* 2011). The goal of nutrition education is to enhance the knowledge, practices, attitude and skills of the people how to grow, process, purchase, prepare, eat and feed an their families a variety of foods, in sufficient quantity and combination. Nutritional status is adversely affected by the undesirable food habits and nutrition related practices. For better understanding of nutritional issues there is need for multi- sectoral approach (Coloame, 1983). Today electronic media has become the most effective tool to disseminate the knowledge in various fields like – agriculture and nutrition. Planned teaching program with video was effective in improving knowledge of women (Roy and Swamy, 2016). Video is becoming the most popular tool to impart knowledge, due to its high information and entertainment capability. Nutrition education imparted by the video has benefited the participans in terms of improvement in their haemoglobin level and gain in knowledge (Tiwari, 2015). Educating people with video has been proved very effective as it involves the senses of seeing, hearing to be and text together. Video which

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combines visual verbal communication is an appropriate tool to spread information for less developed countries. (Vidya and Chinnyan, 2010). Studies have revealed that video extension has the advantage of credibility especially among low literate people and rural women. It has the ability to pause, rewind and stop through which the important points can be seen or learned again and again. Hence, nutrition education if imparted by video can become more interesting, easy to understand and will have long lasting impact.

Cox, 2003 reported that the lesson with video was positively affecting more dietary factors in comparison to traditional lesson. Videos were reported as main source of nutrition to stimulate, uptake and intra-household promotion of the nutrition and hygiene behaviours, the demand of nutrition videos was high (USAID,2015). According to Kashyap and Young, (1989) to improve the nutritional knowledge of rural folk mass media plays a very important role. Tiwari (2015) emphasized that nutrition education impart with innovative instructional tools like videos are very effective. (GiaLenn, 2015) reported that the use of a video in presentation was highly effective in student's learning. Increase in knowledge was found significant after exposure of an educational video film in a hospital (Naseem et.al. 2016).

Video DVD was found effective in knowledge gain among the respondents regarding hygienic and other general dairy health management aspects and interactive after that Vidya (2010). Videos have the potential to reach large audience and make a large stride in education also (Casa 2010). Video is a low cost interactive training method to improve skills and knowledge on complex technical topics among low literacy populations David and Asamoah (2011). Among teaching methods internet, role play and video were ranked more effective by the participants (Rajini and Niharika, 2014).

A significant gain in knowledge was observed in school girls after showing a prepared film strip and a 15 minute video on nutritional deficiency and anemia related information Verma *et. al.* (2014). The study found that among all tools the "a power point presentation, a video and a handout", the video medium was the most preferred education strategy (Parker, 2011). Keeping these points in view, the present study was conducted to assess the effectiveness of video led nutrition education.

METHODOLOGY

The study was conducted in Lachoda village of Baghpat district of Uttar Pradesh (U.P.) during 2016. The village was purposively selected and 42 women farmers were randomly drawn (n=42) to undertake the study, as they take care of all family members and are responsible for their food needs and nutrition the health of family members can be improved by educating female members of that family. The data were collected with the help of Semi-structured interview schedule. To measure the effectiveness of video based nutrition education, an index was developed, which contains different dimensions, i.e., effectiveness of video content, video design, logistic and learning outcomes.

The study was carried out by using the four types of audio-visual aids *i.e.* computer desktop, laptop, pico projector and LCD with screen to assess the effectiveness of the method. A video programme was specially developed for this purpose.

The data were analysed by the descriptive statistics including mean and standard deviation to assess the level of effectiveness of prepared video. Mean score was calculated for each statement. In mean score, the higher score implies the higher effectiveness of video, medium scores implies medium effectiveness and the lower mean score implies the less effectiveness of the video. Respondents categorised the videos messages in five categories *i.e* very low, low, medium, high and very high on the basis of overall effectiveness.

The formula used for this index was as follows:

$$\text{Effectiveness Index} = \frac{VC \times W1 + VD \times W2 + LGS \times W3 + LOD \times W4}{W1 + W2 + W3 + W4} \times 100$$

Where

VC= Video Content

VD= Video Design

LGS= Logistics

LOD= Leaning Outcome of Video

W1= Weightage for the Video Content as given by the judges

W2= Weightage for Video Design as given by the judges

W3= Weightage for logistics as given by the judges

W4= Weightage for leaning Outcome of Video as given by the judges

RESULTS AND DISCUSSION

Effectiveness of video content

It is referred as the importance of video content, relevance, need based and understandable for the target group. The perceptions of the respondents were collected through the schedule. The obtained data are presented in the following table.

Table 1: Categorization of women farmers based on Video Content

Category of video content	Class score	*f*	%
Very low	72-77.6	2	4.76
Low	77.6-83.2	16	38.09
Medium	83.2-88.8	10	23.80
High	88.8-94.4	8	19.04
Very high	94.4-100	6	14.28
Mean		86.71	
Standard deviation		7.14	

Table 1 presents the response of the farm women to the effectiveness of content of video. The effectiveness of video was found low by 38.09 per cent women, followed by the 23.80 per cent and 19.04 per cent respondents who assessed the video as medium and highly effective respectively. Only 4.76 per cent respondents found the video as very low is effectiveness. The table also depicts the mean and standard deviation of video content. The mean score of the video content was 86.71, which denote that the content of video was highly effective. Sub index for video content is shown in Table 2. Videos were assessed high in terms of all the parameters. Videos were found highly effective to understand (4.57) followed by the video was on an important area (4.45) and not having complex and technical words.

Table 2: Effectiveness of video content

Statements	Mean	SD
Shown video was on an important area	4.45	0.59
Video was appropriate on relevant nutritional practices	4.40	0.50
Video was need based	4.40	0.54
The video content was relevant to me and my family	4.40	0.54
I was able to understand the shown video	4.57	0.50
I can apply / practice what was shown in the video	4.38	0.49
The language (pronunciation, style) was simple	4.38	0.54
The words and terms used in video are clean	4.26	0.50
Technical terms in video sare easy to understand	4.07	0.92
The video is not overloaded with technical words	4.02	1.02
Effectiveness of video content	86.71	

Sub index for video content=Actual score/Maximum score *100 =1821/2100*100 =86.71

Effectiveness of video design

Video design was operationalized as audio visual quality, concepts, duration, organized, clarity of video, influencing and appropriate for the respondents. The data obtained from the respondents through schedule is presenting in the table 3.

Table 3: Categorization of women farmers based on video design

Category of video design	Class score	*f*	%
Very low	60-68	1	2.38
Low	68-76	3	7.14
Medium	76-84	18	42.85
High	84-92	16	38.09
Very high	92-100	4	9.52
Mean		82.90	
Standard deviation		7.39	

The table 3 shows that the design of the video was assessed highly effective by 38.09 percent of respondents. The majority (42.85%) of the respondents found it as medium effective. Only a few respondents (2.38%) found it very low effective. The mean score of the design of video was calculated 82.90 which indicate that the design of video was very highly effective (Katie *et. al.,* 2006) reported that children get influenced immediately after seeing the food in video and television.

Table 4: Effectiveness of video design

Statements	Mean	SD
Quality of the audio and video was good	4.31	0.64
Repetition of important concepts was not there in this video	4.00	0.96
Duration of the videos was ok	3.93	0.75
I like conclusion of the video	4.14	0.87
Video was well organized	3.88	1.17
Message of the video was clear	4.31	0.60
The video activities stimulated my learning	4.07	0.84
The activities in this video gave me sufficient confidence to practice at home feedback.	4.26	0.91
The difficulty level of this video was just appropriate for me	4.26	0.50
The pace of this video was appropriate.	4.29	0.71
Effectiveness of video design	82.90	

Sub index for video design=Actual score/maximum score =1741/2100*100=82.90

Video design was assessed in table 4 and found that quality of the audio and video was good. The messages of the video were clear and assessed highly effective with the highest mean score (4.31). Video was well organized and assessed effective with the mean score 3.88. None of the respondents assessed the design of the video low in terms of all ten parameters. Bennet in 2008 also reported that use of video is a more effective learning tool, it could remember easily, what is seen in the video by the students, moreover it has the possibility to stop, start and rewind.

Effectiveness according to logistics

It refers to the organization and implementation of the video, as the instructor was well prepared and helpful, quality of audio and video, timing of video, venue of projection and comfortability of respondents.

Table 5: Categorization of women farmers based on Logistics

Category of logistics	Class score	*f*	%
Very low	56-62	3	7.14
Low	62-68	3	7.14
Medium	68-74	20	47.61
High	74-80	4	9.52
Very high	80-86	12	28.57
Mean		73.23	
Standard deviation		7.32	

Table 5 depicts the logistic analysis of the video. The effectiveness index of logistic was assessed medium by most (47.61%) of the respondents followed by the 28.57percent and 9.52 percent respondents who assessed the video very highly effective and highly effective respectively.

Table 6: Effectiveness index of logistic during video show

Statements	Mean	SD
Video instructor was well prepared.	3.90	1.03
The instructor was helpful	4.14	1.07
The seating arrangement were comfortable	3.93	0.89
Liked the projection quality	4.24	0.58
Timing of video projection was well suited to me	4.31	0.60
Venue of video projection was comfortable	4.26	0.70
Like to watch video along with husband and family members	3.86	1.18
Like to watch video along with only ladies of my village	3.81	1.06
The lighting at time of viewing was comfortable	4.17	0.82
Effectiveness index of logistic	81.37	

Sub index for video logistics=Actual score/maximum score =1538/1890*100 =81.37

Table 6 reflects that maximum farm women were in the opinion that venue suited them (4.31) and it was comfortable (4.26).

Effectiveness of learning outcomes

It refers to the effectiveness index of learning outcomes of the video on the basis of ten parameters like accomplishment of objectives, adoptability of messages and impact of the video.

Table 7: Categorization of women farmers based on learning outcome of video

Category of farmers based on learning outcome of video	Class score	*f*	%
Very low	64-71.2	4	9.52
Low	71.2-78.4	13	30.95
Medium	78.4-85.6	11	26.19
High	85.6-92.8	8	19.04
Very high	92.8-100	6	14.28
Mean		82.47	
Standard deviation		9.10	

The table 7 explains the learning outcomes of the video, 30.95 per cent and 9.52 per cent farmwomen found it low and very low effective respectively, followed by the 26.19 per cent, 19.04 percent and 14.28 per cent respondents who assessed the video medium, high and very high respectively. Farm women were in the opinion that after watching videos they can take best care of their family nutrition and they will like to explore more videos on this aspect.

Table 8: Effectiveness of video in terms of learning outcome

Statements	Mean	SD
I can accomplish the objectives of this video	3.98	0.60
I will be able to use / practice what I learnt in this video	4.24	0.62
I will motivate others to adopt the message of video	4.19	0.71
My knowledge has been increased after watching this video	4.10	0.66
The video has left an impact on me	4.05	0.54
Thevideo was a good way for me to learn this content.	4.14	0.68
I need to clarifythe video objectives by someone	3.76	1.03
I will take best care of my family nutrition after watching this video	4.31	0.64
I will be able to teach my fellow villagers	4.19	0.51
I will like to explore more videos on this aspect/topic	4.29	0.46
Effectiveness of video in terms of learning outcome	82.47	

Sub index for learning outcomes=Actual score/maximum score* =1732/2 =82.47

In table 8 effectiveness of learning outcomes was observed by ten parameters. Effectiveness of the video in terms of learning outcomes was found highly effective in its all parameters. I will take best care of my family nutrition after watching this video and I will like to explore more videos on this aspect, both categories got the maximum scores with a little difference (4.31), (4.29), respectively. I can accomplish the objectives of this video got the minimum scores though it was found highly effective

Overall effectiveness of nutrition video

The overall effectiveness of nutrition video was obtained by developing the effectiveness index based on the above all four components.

Table 9: Overall effectiveness of nutritional messages

Overall effectiveness of nutrition video	Class score	*f*	%
Very low	69.16-74.36	2	4.76
Low	74.36-79.56	13	30.95
Medium	79.56-84.76	15	35.71
High	84.76-89.96	8	19.04
Very high	89.96-95.16	4	9.52
Mean		81.71	
Standard deviation		6.08	

The overall effectiveness of nutritional messages was found medium by 35.71 per cent of respondents. In high and very high categories, 19.04 per cent and 9.52 per cent of respondents were found. While a few 4.76 per cent respondents found it very low effective.

Effectiveness of nutrition video= (Index for video content*weight assigned/100) + (Index for video design*weight assigned/100)+ (Index for logistics*

weight assigned/100)+ (Index for learning outcome* weight assigned/100) * 100
= (0.8671*30/100) + (0.829*30/100) + (0.8137*15/100) + (0.8247*25/100) * 100 =83.70

Overall effectiveness of nutrition video was 83.70, which can be interpreted that videos is one of the effective extension/instructional tool in digital world to motivate or to teach women farmers about agri-nutrtion.

CONCLUSION

The aim of the study was to investigate the overall effectiveness of video in terms of content, design, logistics and learning outcomes of prepared video, among rural farm women to impart knowledge on nutrition. The results of the study shows that, the content and design of video were found highly effective by most of the respondents. The level of the logistics and learning outcomes of using video presentation to the farm women was highly effective. A positive response was observed among the respondents towards the video as they can take care of their family better and they would like to explore more videos on this aspect. Video is an effective, relatively low cost interactive training method for low literacy population. Nutrition education can be very effective with innovative instructional tools like video.

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REFERENCES

Bennet M, Maniar M. 2008. Are videoed lectures an effective teaching tool? http://stream.port.ac.uk/papers/Are%20videoed%20lectures%20an%20effective%20teaching%20tool.pdf.

Casa .P.A.J.H. 2010. A Powerful Teaching Tool: Self-Produced Videos. *Journal of Extension*, 48 (1).

Coloame J.F. 1993. Educational aspects in food nutrition and agriculture in poverty and malnutrition, Proc. Nat. workshop on Poverty and Malnutrition (ed) S.Neelkant, TNAU, Coimbatore, . *G.J.I.S.S.*,Vol.4(6): 304-309

Cox,R.H.. 2003. A video lesson series is effective in changing dietary intake and food –related behaviours of low income homemakers. *Journal of the American Dietetic Association* 103 (11).

Gia Lenn L. 2015. Effectiveness of video presentation to students' learning. International journal of nursing science. e-ISSN: 2167-745X 2015; 5 (2): 81-86.

Kashyap Purnia and Young RH. 1989. Rapid Assessment of Community Nutrition Problems; A Case Study of Parbhani, India IDRC, Ottava Ont Canada 12 (2): 208-219

Katie. 2006. Impact of nutritional messages on children's food choice: Pilot study Appetite 46, 124-129. www.elsevier.com/locate/appte.

Levine,J.S. 1995. Taking Advantage of New Technology Education. Journal of Extension,33 (4):107-115

Naseem Shah. 2016. Effectiveness of an educational video in improving oral health knowledge in a hospital setting. Indian J. Dent. 2016 Apr-Jun; 7(2): 70-75.

Rajini N and Niharika M. 2014. Effectiveness of Nutrition Education and Teaching Methods on Adolescent Girls Nutritional Knowledge. *International Journal Humanities and Social Sciences* 3(5): 2319-393.

Parker S. 2011. Preferred education delivery strategies among limited income older adults enrolled in community nutrition education programs. *Journal of Extension,* 49(1): 212-219.

Vidya P. 2010. Effectiveness of an educational interactive video-DVD on Dairy Health Management Practices in terms of Knowledge gain among Dairy Farmers." *The Online Journal of Rural Research and Policy* 5.7 (2010): 1-7.

Roy N. and Swamy P.N.G. 2016. A study to assess the effectiveness of video assisted teaching programme on knowledge regarding hazard of open air defection among women in selected villages of Waghodia. *International Journal of Applied Research* 2016;2 (5) 782-784

Snehaverma. 2014. Development of nutrition education material to impart nutritional awareness among tribal adolescent girls of Ranchi district. *Asian Journal of Home Science.* 9(2): 388-393

Soniia David and Christopher Asamoah. 2011. Video as a tool for agricultural extension in Africa: a case study from Ghana. International journal of Education and *Development Using Information and Communication Technology* (IJEDICT). 7(1): 322-324.

Tiwari P.2015, Use of video in imparting education to rural illiterate girls on anemia. *Global Journal of Interdisciplinary Social Sciences.* 4 (6); 7-9.

USAID 2015. Community video for Nutrition guide; Using participatory, community- led videos to improve maternal, infant and young child nutrition. 9(1): 228-234.

Vidya P.andM. Chinnyan. 2010. Development of an educational interactive video –DVD on dairy health manafement practices. *International Journal of Education and Development Using Information and Comm-unication Technology.* 6(1): 112-119.