P-ISSN 2322 - 0678 & E-ISSN 3048 - 9946
https://doi.org/10.56572/gjoee.2025.40.2.0001 Gujarat Journal of Extension Education Vol. 40 : Issue 2 : December - 2025

DEVELOPMENT AND FIELD TESTING OF VIDEO MODULE ON MILLETS

Riddhi Mor[1] and Simple Jain[2]

1 Research Scholar, ASPEE College of Nutrition & Community Science, SDAU, Dantiwada. 385506
2 Assistant Professor, Dept. of EECM, ASPEE College of Nutrition & Community Science, SDAU, Dantiwada. 385506
Email : riddhichaudhary231@gmail.com

ABSTRACT

Millets are highly nutritious, climate-resilient crops critical for food security and sustainable agriculture. This study aimed to design and test an educational video module to improve awareness and knowledge about millets among rural women. The present study was conducted in two phases, in phase I, the video module was developed and evaluated by 30 experts. In phase II, the developed video module was field tested with 120 randomly selected rural women of six villages of Banaskantha district to check its effectiveness. Data were collected by using interview schedule, and analyzed by using frequency, mean, and paired t-tests. The findings revealed that the developed video module was rated very good to excellent by experts for visual, audio, content and presentation aspects (3.78-4.98 MS). Findings further revealed that significant improvement in knowledge after exposure to video module was seen as 62.50 per cent respondents were in excellent knowledge category in post test. Thus it could be concluded that developed video module on "millet" was excellent.

Keywords *: video module, millets, rural women, field testing, educational intervention*

INTRODUCTION

Media, especially, video play a vital role in disseminating scientific knowledge and driving behavioral change. It has the potential to mold public opinion and shape individual beliefs and attitudes. Media is an essential tool for behavioral transformation, especially forpoor, ignorant, illiterate, or change resistant population.Video is a powerful medium of communication as it combines visual and auditory senses of audience. It effectively conveys the complex messages in highly engaging manner. Moreover, it captures attention, enhance message retention, and simplify complex ideas through visual story telling.

The effectiveness of videos as a medium of communication depends on several factors such as content, style, design, synchronization of audio with visuals, presentation, audience relevance, pacing etc. If a video is not properly prepared in accordance, than it fails to convey the right message. Thus, it is essential to test before producing it in large numbers.

The focus on developing a video module on millets is driven by the need to address contemporary nutritional, environmental, and socio-economic challenges.Millets are among the oldest food cultivated by human kind. Their charred grains have been found at the Harappan sites and they are also mentioned in the Vedas (one of the oldest archaeological and literary sources of our subcontinent, respectively). An ancient grain, millets have been used both for human consumption and as animal feed. Scientifically, millets are a group of small-seeded cereal grains that belong to the family of grasses(Poaceae family). Millets are capable of sustaining adverse agro-climatic conditions, thus are low input crops as compared to other cereals. Various research studies have made it evident that small millets (little millet, foxtail millet, proso millet, barnyard millet, and kodo millet) are superior in most of the nutritional components as compared to widely consumed cereals like wheat and rice. They play an important role in ensuring nutritional security if consumed on regular basis due to their contribution in providing a well-balanced diet. They also play an important role in economy and food security of developing countries in Asian and African continents.

Although extensive communication material has been developed on millets focusing mainly on their agricultural aspects but very few audio-visual aids specifically videos are available that comprehensively cover their nutritional attributes and health benefits of each millets, processing methods, historical background, and value-addition potential. Therefore, the present study was undertaken to develop and field-test a video module on millet assess its effectiveness in enhancing knowledge about millets.

OBJECTIVES

(1) To develop an educational video module on millets tailored for rural women.

(2) To assess knowledge level of rural women about millet before and after exposure to the video module.

METHODOLOGY

The present study was conducted in two phases:

Development and evaluation of video module

As per the objectives, a Gujarati video module on "Millets" was developed to disseminate information to rural women. For developing the module, relevant literature was reviewed and major content areas were finalized in consultation with experts, namely concept and importance of millets, their history, types, health and nutritional benefits, regions of cultivation, processing methods and millet-based food preparations. The video was produced through systematic steps such as planning, scripting, sequencing, storyboarding, adding visual effects, expert review, recording, editing, time estimation and fine-tuning, resulting in a 26-minute module. It was first pre-tested with twenty non-sample rural women to assess audio-visual clarity, and necessary modifications were made based on their feedback. For evaluation, the module was then given to a panel of thirty experts from food technology, extension education, mass communication and food and nutrition, who assessed visual, audio, content and presentation aspects on a five-point rating scale (excellent to poor) for criteria such as clarity of pictures and voice, logical sequence, synchronization of audio with visuals, relevance and usefulness of content, simplicity of language, layout and speed of presentation, and the video was refined as per their suggestions.

Field testing of video module on millets

The present study was conducted in the Banaskantha district of North Gujarat. Two talukas, namely Palanpur and Vadgam were selected randomly from this district. Three villages from each taluka i.e. Chhapi, Kotadi, Changa, Jagana, Jasleni, and Sedrasanwere randomly chosen. A total of 120 rural women, 20 from each village, were selected through a multi-stage random sampling method. Data were collected by using an interview schedule developed by the researcher. The data collection process involved three steps: pre-testing, exposure to video and post-testing. In the pre-test, respondents' existing knowledge about millets was assessed. After this, video module was shown to a group of 20 rural women and then the post-test was conducted immediately after exposure to evaluate the respondents' knowledge about various aspects of millets.It was then statistically analyzed by using frequency, percentage and mean percent scores and paired samples t-test.

RESULTS AND DISCUSSION

I Evaluation of video module by experts

The self developed video module was subjected to a panel of thirty experts to evaluate it on a five point rating scale i.e. excellent, very good, good, average and poor for visual, audio, content and presentation aspects.A detailed description of this has been given in table below:

Table: 1 Evaluation of the video module by expert

(n=30)

Sr. No.	Particulars	Mean score
I	**Visual aspects**	
	Clarity of pictures	4.25
	Size of illustration	4.90
	Logical sequence	4.91
	Attention catching	4.98
	Self-explanatory	4.86
	Tuning with commentary	4.50
II	**Audio aspects**	
	Voice clarity	4.26
	Voice modulation	4.02
	Background music	4.45
	Pitch	3.78
	Synchronization with visuals	4.23
	Pace of narration	4.12
III	**Content Aspects**	
	Purpose accomplish	4.21
	Content coverage	3.96
	Content relevancy	4.09
	Usefulness	4.75
	Simple and clear language	3.86
IV	**Presentation Aspects**	
	Layout/style of presentation	4.12
	Explanation of idea	4.50
	Overall presentation	4.75

a Visual aspects

Table 1 shows that the visual quality of video module was evaluated onsix parameters i.e. clarity of pictures, size of illustration, logical sequence, attention catching, self-explanatory and tuning with commentary. It is evident from the data that visual quality of video module was found excellent in all the six parameters in the opinion of most of the judges with the mean score ranged between 4.25 to 4.98 out of maximum score 5.0. The attention-catching aspect had highest mean score (4.98)whichindicated that the video was successful in capturing and maintaining the attention of viewers. The logical sequence of visuals (4.91) highlighted that the flow of the video was smooth and easy to follow. The size of illustrations received a mean score of 4.90, showing that the visuals were adequately sized for easy viewing.

Experts also rated excellent forthe self-explanatory aspect of the visuals (4.86)as the visuals were clear and required minimal additional explanation. The clarity of the pictures (4.25) reflecting that the visuals were fairly sharp, though there might be slight provision for improvement in image clarity. The tuning of visuals with commentary was rated excellent (4.50) indicating good coordination between what was shown and the accompanying narration.These findings align with research highlighting that clear, well-structured visuals enhance learner engagement and comprehension in educational videos (Magnabosco et al., 2023; Guo et al., 2023).

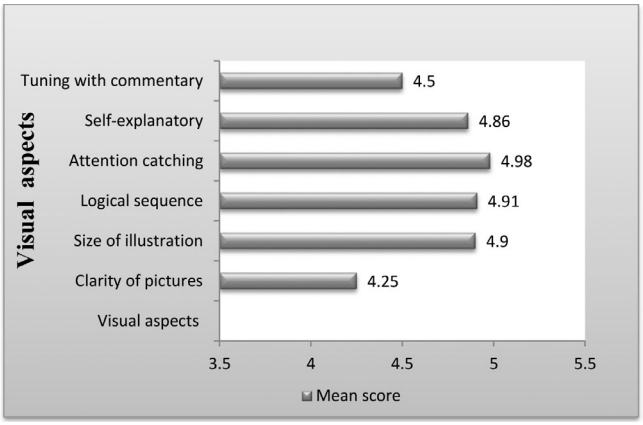

Fig. 1 : Evaluation of the video module by experton visual aspects

b Audio aspects

The audio quality of video module was assessed through six parameters i.e. voice clarity, voice modulation, background music, tone of voice, synchronization with visuals and pace of narration. It is clear from the Table 1 that the background music was rated excellent (4.45) which enhanced the overall viewing experience. The synchronization between the audio and visuals (4.23) and the pace of narration (4.12) were rated very good. It indicated that the sound and images were well-coordinated as well the speed of delivery was also appropriate but it could be refined slightly for better flow. The voice modulation and pitch scored slightly lower withmean score 4.02 and 3.78, respectively. It showed that the variation in tone and pitch could be improved to make the presentation more engaging (Table 1). These results corroborate studies emphasizing the importance of clear voice, sound synchronization, and engaging modulation to strengthen instructional video quality (Magnabosco et al., 2023; Guo et al., 2023).

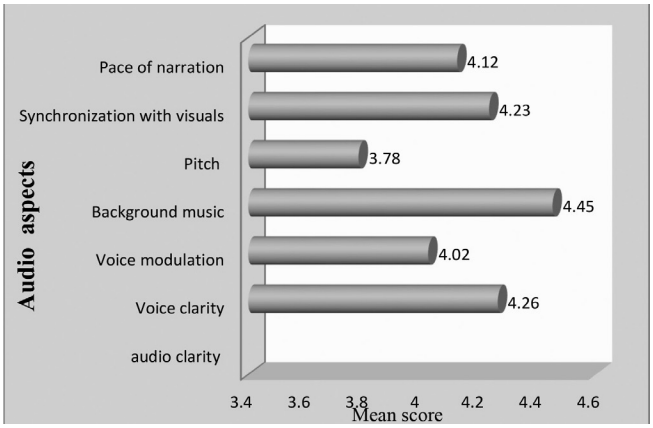

Fig. 2 : Evaluation of the video module by experton audio aspects

c Content aspects

Table 1 reveals that content importance of video module was perceived very good by most of the experts in terms of all the five attributes i.e., purpose accomplish, content coverage, content relevancy, usefulness and simple and clear language. The usefulness of the content was rated excellent (4.75) by the experts that shows the content was beneficial for the target group. It was followed by the purpose of the video module (4.21) and content relevancy (4.09). It indicates that thedeveloped video effectively achieved its objectives while supplying the relevant and suited information as per topic. The content coverage received a slightly lower mean score (3.96) as the topic was very wide and extensive and could not be covered fully in one video module. The use of simple and clear language was rated very good (3.86).

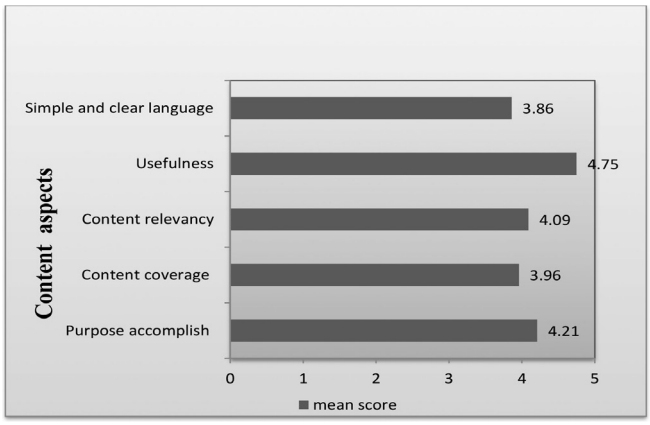

Fig. 3 : Evaluation of the video module by experton content aspects

c Presentation aspects

Table 1 shows the presentation aspectof video module which was assessed on two parameters i.e. layout/

style of presentation and explanation of idea. The layout and style of presentation was rated very good(4.12) reflecting that the video was well-organized. The explanation of idea (4.50) indicates that the concept was clearly presented for better understanding of the aspects of millet. These high ratings could be attributed to continuous consultation with subject experts and the clear, sequential presentation of information, which is supported by Panasara (2024), who emphasized the importance of expert guidance and content clarity in educational media development.

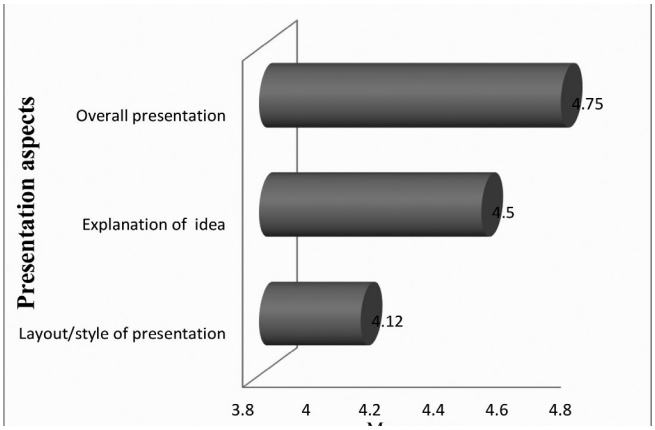

Fig. 4 : Evaluation of the video module by experton presentation aspect

The overall presentation of the video was rated 4.75, which shows that the developed video module was effective to serve the purpose for which it was designed. Experts mentioned that the developed video module on millet effectively communicate the intended messages to target group. The main reasons for good rating might be that the time to time consultation with subject experts, incorporation of their suggestions, exclusion of unnecessary details and unclear visuals, use of appropriate language and moving images, sequential presentation, use of proper voice modulation and background music so,it was recommendedfor further multiplication and use for dissemination of information. The study is align with the research finding of Manju et.al., 2023 who reported that developed multimedia CD on value addition of mangoes was rated as excellent by experts in all the parameters i.e. purpose accomplished, content coverage, logical sequence, organization, illustration, visual clarity, attention catching, self-explanatory and synchronization of audio and visuals.

II Knowledge level of the respondents before and after administration of video module

(a) Comparison of knowledge level before and after administration of video module

An attempt has been made in the study to find out the effectiveness of the video module on knowledge gain among the respondents regarding millets. It was assessed by using paired samples t-test. The test compared the knowledge levels of respondents before and after the intervention. By examining pre- and post-intervention responses, the test aimed to determine whether there was a statistically significant improvement in the participants' knowledge.

A comparative analysis of knowledge levels of respondents about various aspects of milletsbefore and after the administration of the video module is presented in Table 4.42. It is evident from Table that there is significant difference between pre and post knowledge of the respondents in all the aspects of the millets except one i.e. know the millet as the calculated 't' value is higher than tabulated 't' value. A slight increase in mean score (0.11) regarding general awareness about millets was seen which reveal that the respondents may have already been familiar with the "millet" before watching the video. In contrast, the concept of millets saw a substantial increase in understanding, with a mean difference of 0.68, making this improvement highly statistically significant ($p < 0.0001$). Similarly, respondents' knowledge of different types of millets improved significantly after watching video, with mean differences of 0.63. The high t-values indicate that respondents gained a clear understanding of various types of millet.

A significant increase in knowledge was seen for the origin of millet (0.71) and the major millet-producing regions in India (0.75) with high t-values. Health and nutritional benefits of millets were well understood after seeing video with a mean difference of 0.68. It revealed that the respondents could grasp the key benefits associated with millet consumption.

The video enhanced knowledge of the respondents about suitable food combinations with millets (0.76), consumption of different millets as per season (0.70), and various food items prepared from millet (0.66). Each of these aspects recorded significant mean differences and high t-values, affirming the module's effectiveness in conveying actionable knowledge. Knowledge of the respondents (0.68) regarding millet processing methods was improved considerably.

It can be concluded that the video module had a highly significant impact on improving knowledge of the respondents about various aspects of the millets. Only one aspect i.e. know the milletsshowed a non-significant (NS) change. Thus, the developed video module was an effective educational tool for conveying diverse information about millets, from their types and origins to their health benefits and processing methods.

Table 2 : Comparison of knowledge level among respondents before and after administration of video module

(n =120)

Sr. No.	Aspect	Mean		Std. deviation		Mean difference	Std. error of mean diff.	t-value
		Pre	Post	Pre	Post			
1	**Know the millets**	1.89	2.00	0.312	0.000	0.11	0.028	3.93 NS
2	**Concept of the millets**	1.15	1.83	0.359	0.374	0.68	0.033	20.61*
3	**Different types of millets**	1.21	1.84	0.408	0.367	0.63	0.037	17.03*
4	**Different major millets**	1.10	1.82	0.301	0.389	0.72	0.028	25.71*
5	**Different minor millets**	1.09	1.81	0.290	0.395	0.72	0.026	27.69*
6	**Origin of millet**	1.08	1.79	0.282	0.411	0.71	0.026	27.31*
7	**Main millet producing regions in India**	1.12	1.87	0.320	0.341	0.75	0.029	25.86*
8	**Health and nutritional benefits of different millet**	1.10	1.78	0.312	0.414	0.68	0.028	24.29*
9	**Appropriate food combination with millets**	1.13	1.89	0.332	0.312	0.76	0.030	25.33*
10	**Consumption of millet as per season**	1.15	1.85	0.359	0.355	0.70	0.033	21.21*
11	**Various food items prepared from millet**	1.18	1.84	0.384	0.367	0.66	0.035	18.86*
12	**Know the processing of millet**	1.11	1.78	0.312	0.414	0.67	0.028	23.93*
13	**Different methods of millet processing**	1.12	1.80	0.320	0.405	0.68	0.029	23.45*

* Highly statistically significant at less than 0.0001, NS= Not Significant

(b) Distribution of the respondents in various knowledge categories

To get an overview of the knowledge, the respondents were grouped under three categories of knowledge namely poor, good and excellent on the basis scores obtained by them. As per pre knowledge of the respondents about various aspects of the millets, most of the respondents (65.00%) had poor knowledge whereas 22.50 per cent of respondents were in good knowledge category. Only 12.50 per cent respondents had excellent knowledge. The findings clarifies that although respondents had knowledge about some of the aspects of millets before watching video but it was not up to the mark.

Table 3: Distribution of respondents' knowledge scores on millets before and after the video module (n=120)

Knowledge score range	Pre		Post	
	Frequency	Percent	Frequency	Percent
Poor (0-16)	78	65.00	10	08.33
Good (17-32)	27	22.50	35	29.16
Excellent (33-48)	15	12.50	75	62.50

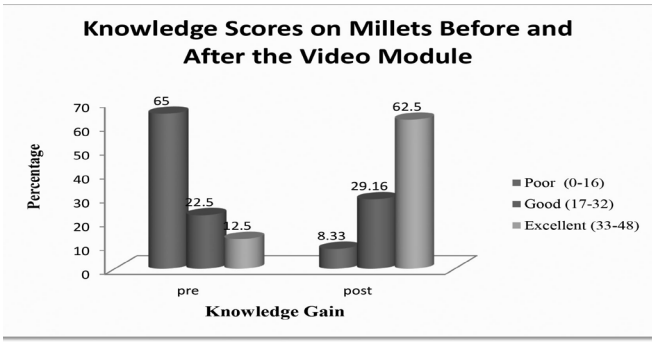

Fig. 5 : Distribution of respondents' knowledge scores on millets before and after the video module

Post knowledge data reveal that there was a significant improvement in knowledge level of the respondents. The respondents showed good (29.16%) to excellent (62.50%) knowledge about various aspects of millets after watching the video. Only 8.33 per cent of respondents remained in the Poor category, indicating a notable decrease from the pre-test. This shift from poor and good knowledge levels to excellent after the watching the videomodule indicates the effectiveness of the module in increasing respondents' knowledge about millets.This significant knowledge gain aligns with findings by Rajesh Kumar Sahu and Sharma (2024), who noted improved communication and knowledge outcomes in tribal millet farmers through tailored educational interventions.

Statistically significant improvements in knowledge about millets were recorded after participants viewed the video module (mean difference = 0.68, $t = 20.61$, $p < 0.0001$). Experts rated visual clarity, sequencing, and overall content highly (scores ranging from 4.21 to 4.98/5). Results were compared to findings of Manju et al. 2023 who confirmed that the effectiveness of multimedia interventions in enhancing the knowledge of rural women.The overall effectiveness of the video in improving knowledge and engagement reflects similar successes seen in other educational media, such as the flipbook on vegetables developed and field-tested by Jain (2017), reinforcing the value of well-designed, culturally appropriate audiovisual aids for rural audiences.

CONCLUSION

It can be concluded that the respondents exhibited limited knowledge about various aspects of millet including nutritional benefits, varieties, applications of millet etc before the intervention but a notable increase in the respondents' knowledge about millets was observed after exposure to the video module. A significant improvement in their understanding about health and nutritional benefits of millets, their types, producing regions, processing methods was seen. This indicates that the video module was effective in addressing the knowledge gap and augmenting respondents' understanding of millets.It can be said that the developed video module on "Millets" was excellent. Therefore, extension agencies, field functionaries, NGOs, and others involved in developing communication materials should consider these important points while creating audiovisual aids to ensure the material is highly effective in disseminating the intended message.

RECOMMENDATION

Extension agencies should use similar video-based modules for large-scale nutrition education.

ACKNOWLEDGEMENT

The authors gratefully acknowledge the support of the community leaders, participant women, and expert reviewers whose feedback shaped the video module.

CONFLICT OF INTEREST

There is no conflict of interest among the authors.

REFERENCES

Guo, P. J., et al. (2023). Using learner reviews to inform instructional video design in MOOCs. *International Journal of Educational Technology in Higher Education*.*20*(1), 8.

Jain, S. (2017). Development and field-testing of a flipbook on vegetables in diet for rural women. *Gujarat Journal of* Extension Education, 12, 136–140.

Magnabosco, P., dos Santos, M. R., and de Santana, M. C. F. (2023). Production and validation of an educational video on intramuscular drug administration using the Z-track technique. *Revista Latino-Americana de Enfermagem, 31*, e3864.

Manju, Upadhyay, R. and Solanki, D. (2023). Field testing a multimedia CD on value-addition of mango for its comprehension by rural women. *GAU Res. J*., 48(4), 280–286.

Panasara, U.S. (2024). Development and standardization of media package on consumer rights and certification mark for rural consumers. *Gujarat Journal of* Extension Education, 38(1), 45–52.

Rajesh Kumar Sahu and Sharma, M.L. (2024). The communication traits of the tribal millet farmers in study area. *Gujarat Journal of* Extension Education, 8 & 9, 113–118.

Sharma, R. (2012). Development and evaluation of CD-ROM as a teaching tool for nutrition education of professionals in the information technology sector of Hyderabad, Andhra Pradesh. *Indian J. Ext. Edu*., 48(1 & 2), 81–83.

Received : August 2025 : Accepted : October 2025