GAU Research Journal **48** (1) : 82-87 (January 2023)

Development of Multimedia CD on Value-Addition of Mango

Manju*[1], Upadhyay R. [2] and Solanki D.[3]

[1]Department of Home Science University of Rajasthan, Jaipur. 302004.
[2&3]Department of EECM College of Community and Applied Science, MPUAT, Udaipur
*E-mail: manjuch059@gmail.com

ABSTRACT

Investing in the creation and dissemination of quality content has a profound role in the process of empowerment. With time communication media have evolved in society which has brought drastic change in the way people seek and share information. Significance of quality content is no less for rural communities as traditional communication medias have not reached the far-flung areas. The new communication media has the advantage that it reaches every nook and corner as well as it reaches to people with a rocket speed. Looking at the importance of new media, a multimedia CD has been developed on the value-addition of mango for rural women. Results of the expert evaluation of the multimedia CD confirm the audio and visual quality of the CD as it has been rated excellent (>4 out of 5) in all aspects by the panel of experts. The study concluded that the developed multimedia CD effectively conveyed its content with clarity and engagement, and it was organized well.

Keywords: Value-addition, Multimedia CD, Communication material, Rural women

INTRODUCTION

As society develops over time, so do the communication media. In recent years, the manner in which individuals learn, receive, and share information has significantly changed as social media has become an important global communication tool. For the farming community as well, information-sharing techniques have changed. Social media offers a new platform for exchanging ideas and connecting with other farmers, businesses that serve farmers and agricultural experts over vast distances.

E-content which is appropriate and easy to understand can bring the required change in farmers' knowledge regarding various technologies and methods of farming. Despite having higher agricultural production, high post-harvest losses make agriculture a loss-making enterprise because farmers do not have access to processing technologies and the information required for processing and value-addition of agricultural crops. Women farmers are the major stakeholders of agriculture and allied activities but they do not have ownership of agricultural inputs. Women do not even have a say in decision-making in any of the major decisions taken both at the farm and at home. She has less access to different kinds of trainings organized regarding agricultural inputs like seed treatment, fertilizers, improved technologies and sowing methods and various techniques to reduce post-harvest

losses and processing of farm products to add value to the final product.

The increased internet and smartphone access has also increased the woman's chance to have scientific information at home.She can overcome the phenomenon of going out of the home to a faraway place to get training on different aspects of agriculture as this has largely been men's space to get trained. Availability of quality e-content at their own space will help women to access it at their own convenient time and it also saves their energy and time to get any kind of information and knowledge. Looking at the significance of the value-addition of agricultural crops at the farm level, a multimedia CD has been developed on the value-addition of mango for rural women. India is one of the highest mangoes-producing country. This high production and low shelf life of the fruit makes it the perfect fruit for value-addition. The market has a variety of value-added mango products available and demand is high for mango products. Seven popular products that could easily be prepared at home were selected for the video production of multimedia CD.

REVIEW OF LITERATURE

Subhash et al (2018) conducted a study to assess the effectiveness of a web module on dairy innovations in improving the knowledge levels of dairy farmers in India and found that the interactive web module was effective in improving the knowledge of dairy farmers on dairy innovations.

Chatterjee et al (2019) conducted a study titled “Effect of Multimedia on Preparation of Traditional Dairy Products at the Household Level” in eight villages of Karnal district of Haryana and reported that there was a significant gain in the knowledge level and considerable change in retention of the gained information regarding production procedure of the traditional dairy products due to exposure to the multimedia. The major changes were observed in the method of preparation of *Dahi*, *Ghee* and paneer which were highly desirable for the quality dairy product.

Nithya Shree (2019) conducted a pre-post experimental study to discover efficient methods to disseminate information about the health and hygiene of adolescent girls in rural areas of Dharwad district in Karnataka, India. Four different mobile learning modules (m-learning modules) were developed including Lecture, Video-Lecture, Video-Drama, and Video-Animation. Outcomes of the study were measured using pre and post-test for knowledge gain and results affirmed that all four formats were effective in enhancing knowledge. The study also suggested that mobile learning modules are an economical and effective means of imparting knowledge to rural adolescent girls.

Rani and Lal (2019) conducted a study to analyse the effectiveness of a Compact Disc (CD) as a media tool to empower rural women in vegetable cultivation and found the CD to be highly effective in imparting knowledge and positively influencing the attitudes of rural women towards vegetable cultivation.

Tripathi et al (2019) developed a mobile app on buffalo reproduction and summarized that the mobile app was well-received by its target audience, with a highly perceived utility and effectiveness. It provided valuable information and guidance on buffalo reproduction, addressing common problems and offering practical solutions. Despite some initial technophobia and varying perceptions about precision and

coverage, the app had the potential to contribute positively to the knowledge and practices of buffalo owners, VLDA professionals, and veterinarians.

MATERIALS AND METHOD

Multimedia CD development process was accomplished in two phases: designing of multimedia CD and expert evaluation of multimedia CD.

Designing of multimedia CD on value-addition of mango

A video script was written using scientific information available on the value-addition of mango through primary and secondary data sources. The content of the script was classified into chapters i.e., Introduction, Preparation of values added products of mango like *Amchoor*, raw mango *murabba*, mango pickle, raw mango squash, mango jam, *Aam-papad* and preservation of mango as pulp and closure. A separate template of experience sharing by a successful women entrepreneur was added to the script. The necessary video scenes, photographs, illustrations etc., as per the script developed were first captured and assembled according to the storyboard created using Pinnacle Studio version 9 video editing software. The storyboard presented the visual description of long, medium and close-up shots. The audio editing software used for the off-camera narration was recorded and edited using Sound Forge version 8.0. The assembled video clippings were edited and incorporated with off-camera narration audio, background music and sound effects. The development of the video CD took four months, with one month for preparation of the video script and three months for video editing and disc authoring.

Expert evaluation of multimedia CD on value-addition of mango

The developed video CD was then evaluated by a panel of experts from the Department of Extension Education & Communication Management and Foods & Nutrition. An evaluation sheet was prepared by the researcher which included visual and audio aspects of evaluation. The visual evaluation aspect had 10 evaluation criteria *i.e.*, purpose accomplished, content coverage, logical sequence, organization/ layout, illustration. visual clarity, attention-catching, self-explanatory, synchronization of audio and video and overall presentation. The audio evaluation aspect included 5 evaluation criteria such as content clarity, voice, pace & speed of narration, background music and overall presentation. Experts evaluated the multimedia CD on a 5-point continuum i.e., excellent, very good, good, fair and poor scoring 5,4,3,2 and 1 respectively. Suggestions given by the experts were incorporated, scores were compiled in MS Excel and mean-weighted scores were calculated.

RESULTS AND DISCUSSION

I. Visual evaluation of multimedia

Ten different criteria were used for visual evaluation of the multimedia CD on a five-point continuum with scores such as 5,4,3,2 and 1 respectively. Results of the visual evaluation are presented in Tables 1.1 and 1.2.

II. Overall visual evaluation of multimedia CD

Results of the overall visual evaluation of the multimedia CD as presented in Table 1.1 reflect that the mean weighted scores of all the evaluation criteria were between 4.50 to

4.80 and in synchronization of audio and visuals and the overall presentation of the multimedia CD the mean weighted score was 4.80. It shows that the CD was marked as excellent by the experts.

Table 1 : Overall visual evaluation of multimedia CD

S.No.	Item	Mean Weighted Score
1.	Purpose accomplished	4.70
2.	Content coverage	4.60
3.	Logical sequence	4.65
4.	Organization/ Layout	4.65
5.	Illustration	4.50
6.	Visual Clarity	4.75
7.	Attention Catching	4.60
8.	Self-Explanatory	4.60
9.	Synchronization of audio and visuals	4.80
10.	Overall Presentation	4.80

Results are in conformity with Jain (2017) where visual perception of developed e-book was rated very good by the experts.

1.2 Component-wise visual evaluation of multimedia CD

Table 2 delineates the component-wise scores given to different aspects of multimedia CD and data given in the table clearly depict that the CD was well received by the experts and it was felt effective and engaging for the audience. A close observation of the table reveals that all the criteria were rated between 4.5-4.80 out of 5 reflecting the well-prepared, organized, and visually appealing properties of the developed multimedia CD.

Table 2 Component wise visual evaluation of multimedia CD

Component	Purpose accomp-lished	Content cover-age	Logical sequ-ence	Organi-zation/ Layout	Illus-tration	Visual Clarity	Attention Catching	Self-Expla natory	Synchro-nization of audio and visuals	Overall Presen-tation	Mean Weighted Score
Need and benefits of value-addition	4.60	4.60	4.70	4.80	4.20	4.80	4.70	4.60	4.80	4.80	4.66
Mango products	4.80	4.60	4.60	4.50	4.80	4.70	4.50	4.60	4.80	4.80	4.67
Overall visual representation	4.70	4.60	4.65	4.65	4.50	4.75	4.60	4.60	4.80	4.80	4.67

It also confirms that the multimedia CD scored consistently well across different components and the average score allotted by the experts was 4.66 and 4.67 in all aspects of multimedia CD. It reflects that the multimedia CD covered the content comprehensively and it achieved the intended purpose.

ii. Audio evaluation of multimedia CD

2.1 Overall audio evaluation of multimedia CD

The audio quality of the multimedia CD was assessed on the basis of 5 evaluation

criteria such as content clarity, voice, pace and speed of narration, background music and overall presentation. A close analysis of Table 3 conveys that the overall audio quality of the multimedia CD was rated excellent scoring 4.58 to 4.89 out of 5 in all the criteria. The overall presentation of the CD highly convinced the experts about its audio quality and it scored 4.89 out of 5.

Table 3: Overall audio evaluation of multimedia CD

S.No.	Item	Mean Weighted Score
1.	Content clarity	4.87
2.	Voice	4.78
3.	Pace and speed of narration	4.71
4.	Background music	4.58
5.	Overall presentation	4.89

2.2 Component wise audio evaluation of multimedia CD

Table 4 describes the component-wise audio evaluation of multimedia CD and affirms that the audio quality of all the components of multimedia CD was considered excellent by the experts. The mean weighted score was 4.76 and 4.77 for all the components. Mean weighted scores of overall presentation of audio evaluation were highest in all the components which asserts the audio quality of the multimedia CD.

Table 4 Component wise audio evaluation of multimedia CD

Component	Content Clarity	Voice	Pace and speed of narration	Background music	Overall presentation	Mean Weighted Score
Need and benefits of value-addition	4.96	4.72	4.72	4.50	4.96	4.77
Mango products	4.74	4.80	4.78	4.71	4.81	4.77
Overall audio representation	4.90	4.82	4.62	4.54	4.91	4.76

CONCLUSION

Both the audio and visual components of the multimedia CD received high scores, suggesting that the CD effectively conveyed its content with clarity, engagement, and good organization. It could be concluded from the study that good quality content can be delivered to the rural community through the media which is easy to comprehend. Multimedia CD bridge information gaps, offer opportunities for learning and growth, and can contribute to overall community development and improvement in the quality of life. It can be a powerful tool for empowerment, education, and development in rural communities.

REFERENCES

Akhtar, N. (2019). Role of E-Content in Agriculture Extension. Agri Review, 40(2), 76-81.

Barker, P., and King, T. (1993). Evaluating interactive multimedia courseware: A methodology. Computers &

Education, 21(4), 307-319. https://doi.org/10 1. .1016/0360-1315 (93) 90005-7

Chatterjee, D., Jha, S. K., and Maiti, S. (2019). Effect of Multimedia on Preparation of Traditional Dairy Products at the Household Level. In ISEE National Seminar 2019.

Food and Agriculture Organization (FAO). (2020). e-Agriculture: Harnessing the Power of Technology for Farming and Rural Development. Retrieved from http://www.fao.org/e-agriculture/

Gautam, P. K., Kumar, V., Patnaik, N. M., and Kar, P. (2019). Effect of Multimedia on Clean Milk Production Practices Followed by Dairy Farmers. ISEE Seminar/2019/ABS/310.

Hausenblas, H. A., and Downs, D. S. (2004). Development and evaluation of a multimedia CD-ROM for exercise during pregnancy and postpartum. Journal of Obstetric, Gynecologic, & Neonatal Nursing, 33(4), 465-472. doi: 10.1177/0884217504266582

Hobbs, P. R., and Kerr, J. M. (2019). Agri-Food Value Chains and Poverty Reduction: Overview of Main Findings. In P. R. Hobbs & J. M. Kerr (Eds.), Agri-Food Value Chains and Poverty Reduction: A Comprehensive Overview (pp. 1-30). Springer.

Jain, S. (2017). Development and field-testing of a flipbook on vegetables in diet for rural women. Journal of Community Mobilization and Sustainable Development, 12(1), 136-140.

Lating, P. O., Kucel, S. B., and Trojer, L. (n.d.). Design and development of interactive multimedia CD-ROMs for rural secondary schools in Uganda. International Conference on Advances in Engineering and Technology. Makerere University, Uganda & Blekinge Institute of Technology, Sweden.

Rani, S., and Lal, M. (2019). Media Effectiveness on Rural Women in Haryana for Vegetables Cultivation. Indian Journal of Extension Education, 55(1), 21-27.

Shree, D.A. Nithya. (2019). M-Learning Module – An Effective Digital Approach for Rural Adolescent Girls. ISEE Seminar/2019/ABS/040.

Subash, S., Gupta, J., and Gereketi, P. B. (2018). Effectiveness of the Interactive Web-Module on Knowledge Empowerment of Dairy Farmers. *Journal of Animal Health and Production*, 6(1), 13-17.

Tripathi, H., Dixit, V. B., Singh, S., and Kumar, D. (2019). Development and Field Testing of Need-Based Mobile App on Buffalo Reproduction: An Educational Tool for Information Dissemination. In ISEE National Seminar 2019.

United Nations. (2020). Digital Agriculture: Harnessing Technology for Sustainable Food Systems. Retrieved from https://www.un.org/en/digital-agriculture

Vidya, P.; Manivannan, C.; and Kumar, N.K. Sudeep (2010) "Effectiveness of an Educational Interactive Video-DVD on Dairy Health Management Practices in Terms of Knowledge Gain among Dairy Farmers," Online Journal of Rural Research & Policy: Vol. 5: Iss. 7. https://doi.org/10.4148/ojrrp.v5i7.267

World Bank. (2020). Agriculture and Digital Transformation. Retrieved from https://www.worldbank.org/en/topic/agriculture/digital-agriculture