DESIGNING AND VALIDATION OF A VIDEO BASED INSTRUCTIONAL DEVICE (CD-ROM) ON ABORTION IN DAIRY ANIMALS

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ABSTRACT

A video based CD-ROM on abortion in dairy animals was designed and its appropriateness as an instructional device was validated. The CD-ROM was prepared by developing a manuscript containing all the relevant information about abortion in dairy animals and the multimedia elements viz. text, stills/photographs, videos and audio. The developed device was presented to 20 subject matter experts for the validation of multimedia elements and the attributes of the developed CD-ROM. Mean score of 3.74/4.00 was assigned to multimedia elements and the final rating score of the attributes of CD-ROM was 3.87/4.00. After exposure to CD-ROM, the respondents had enhancement in their knowledge level. In brief, the CD-ROM on abortion in dairy animals was appropriate and valid instructional device for the dissemination of relevant information to end user.

Keywords: Abortion, CD-ROM, Dairy animal, Validation, Video

All-time access of livestock farmers to reliable scientific information is essential for sustainable and profitable livestock production. Modern day information and communication technologies (ICTs) are important tools for learning and dissemination of livestock husbandry knowledge to the end users (Angello, 2015). Among various reproductive disorders occurring in a dairy herd, each abortion represents a significant loss of potential income (Rs. 30,000-50,000) to the producer. This warrants appropriate action to prevent abortion and to investigate the cause of abortion. As an instructional device, the compact disc - read only memory (CD-ROM) is popular for dissemination of information in a holistic and comprehensive way as CD-ROM allows text, audio, video and images to be played in a synchronized fashion. Most of the rural households engaged in livestock rearing have television sets and CD/DVD or other video players. Hence, an educational CD-ROM on abortion in dairy animals was prepared and its appropriateness was validated.

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The manuscript on abortion in dairy animals was developed by collecting information from various books, journals, websites, compendia and experts. Manuscript contained information on importance of topic, general terminology, various causes of abortion, correct managemental practices to prevent abortion and other guidelines about what to do if an abortion occurs in a dairy animal. All the multimedia elements viz. text, graphics, audio and video were developed as per the requirements of manuscript (Figure). The audio elements of video and background narration were recorded in vernacular Punjabi language. After using different computer softwares for editing, integration and synchronization of multimedia elements, the raw type CD-ROM was developed.

Using a marking scale out of 4.00, the multimedia elements of CD-ROM were evaluated by 20 subject matter experts (Singh, 2012). The recommended suggestions and corrections were incorporated into the final CD-ROM. Thereafter, an overall rating score based on four attributes was assessed for CD-ROM. To assess the effectiveness of developed CD-ROM as an instructional device, the pre- and post-exposure testing of randomly selected respondents (n=68)

Table 1: Measures of appropriateness of multimedia elements for CD-ROM on abortion in dairy animals

Multimedia Elements	Score (4.0 scale)	Mean Score
Content / Text		
Font Size	3.8	3.75
Font Colour	3.7	
Visual / Still		
Illustrativeness	3.9	3.83
Sharpness	3.6	
Placement	3.7	
Rationality	3.8	
Video		
Clarity	3.8	3.75
Rationality	4.0	
Duration	3.7	
Graphic		
Complexity	3.5	3.6
Rationality	3.7	
Audio		
Rationality	3.9	3.74
Pronunciation	3.8	
Speed	3.6	
Pause	3.7	
Emphasis	3.7	
Synchronisation	3.9	
Background Music	3.6	
Overall Mean Score		**3.74**

was done through a knowledge test comprising of 50 questions on various aspects of abortion in dairy animals.

The mean score of different aspects of multimedia elements as judged by the experts ranged between 3.5-4.0 (Table 1). The average score of content/text, video, still photograph, graphic and audio element was 3.75, 3.83, 3.75, 3.60 and 3.74, respectively (Table 1). The overall mean score of 3.74 (93.5%, Table 1) assigned to multimedia elements proved that the developed CD-ROM possessed all the qualities of a standard video based instructional device. In another CD-ROM on dairy enterprise, the mean score of multimedia elements as rated by subject matter experts was 3.67 (Singh, 2012). The basis for the final rating of the developed CD-ROM were the four different attributes viz. relevance of technical material, effectiveness of information, organisation and execution of contents and effectiveness of integration of multimedia elements and the scores achieved were 3.91, 3.82, 3.87 and 3.90, respectively, with overall mean score as 3.87. This justifies its use as an instructional device for delivering all the information related to abortion in dairy animals to the targeted end users.

Figure 1: Snapshots from the developed CD-ROM on abortion in dairy animals

The testing of respondents prior to the exposure to CD-ROM revealed that 41.2% scored poor (score <25), 50% scored good (score 25-35), 8.8% were very good (score 35-45) and none was excellent (score 45-50). These proportions respectively changed to 0%, 1.5%, 48.5% and 50%. The results showed a major increase in knowledge level of the users about various aspects of the abortion, after being exposed to video contents on CD-ROM. Others also suggested that interactive video-DVD was an appropriate tool to disseminate knowledge on various dairy farming related practices (Mallinga *et al.,* 2012).

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