

Framework for Implementing Educational Concept Videos at Bangladesh Open University

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Abstract

Video has been widely used as an effective media for delivering varied educational contents through broadcast and/or web. Video-mediated learning has been expanded for its effectiveness, and no doubt, there is an evolution in the production of videos because of technological development. Now-a-day, one can make video rapidly without cost using his or her smartphone. In this way, characteristics of educational video have been changed and short duration videos are of very friendly to the mobile users, and the demand for concept video, also known as ‘explainer video’, is increasing day-by-day. In response, Bangladesh Open University (BOU) developed a framework for the effective use of educational concept videos. This paper discusses the framework for making concept video which consists of a methodology and design guidelines, and both are linked to learning objectives. Short duration concept videos prepared in the form of transformation of BOU texts using the framework was experimented in focus group discussions (FGDs) where it was compared with the long duration video lecture based on the same texts. This paper portrays the findings of FGDs. Results suggest for mainstreaming concept videos in the academic delivery at BOU.

1. Introduction

Bangladesh Open University (BOU) uses Open and Distance Learning (ODL) approach through self-learning materials (SLMs), face-to-face (F2F) contacts in the weekends, and audio-video materials through web-Radio and web-TV, and BOUTube along with other self-integrated technology i.e., social media such as Facebook, WhatsApp etc. The University uses a large Open Educational Resources (OER) Repository under the BOU OER Policy 2014, and MOODLE as Learning Management System (LMS). In this way, Technology-Enabled Learning (TEL) has been the part of university system. Learners’ engagement mostly has been through TEL. Video has been one of the most important learning resources at BOU for its effectiveness. Key (2012) also supports that video is of good resource for uplifting students’ learning ability. In line with this, BOU puts efforts to use videos in different forms depending on the technology. Alam and Islam (2007) found that BOU videos are of traditionally lecture-based and virtual interactive classroom (VIC) based videos had been effectively launched in 2007 using the SMS (short message service) technology. BOU used to broadcast videos on national TV chunk for long. Now it is stopped as the broadcast has been less important and mobile technology showing its strengths of delivery at any time. In this way, pattern of video resources, at BOU, have also been changed. Therefore, in view of the above arguments, a study was conducted to test the efficacy and feasibility of mobile-compatibility concept videos as learning resource. This article presents the results and suggests a framework for using the concept videos in its ODL system.

2. Literature

Wong (2020) conducted a survey on undergraduate and postgraduate students to explore the learning effectiveness of video in teaching business related topics and sought suggestions for improving teaching using video clips, and found learning through video had been perceived as effective by the students. It is important to mention that distance learning university uses videos as learning resource, and video reduces the loneliness of the deferred students who adhere to video tools for continuing their studies under distance education (Copley, 2007; Geri, 2012). This is also true for the BOU, as distance learning university; it had been using videos from 1965 through its predecessors for the school learners, and continues for its effectiveness in students’ leanings. Period of studies by Copley (2007) and Geri (2012) were the era of long duration videos. BOU also used to prepare 23-minute videos. ICT has changed the environment and idea of educational videos has been changing day by day. Video clips have been getting popularity in the field of education. Liubojevic et al. (2014) included videos and video clips into lectures and tested the impact, and found that video clips have positive impact on students’ exam results. It seemed that it did affect the results in a positive way. In this way, a video lecture has been video ephemera i.e. video clip; now it is being called ‘Concept Video’ which is limited to portray only a concept. Concept video is being widely used in marketing. It is sometimes called as an ‘explainer video’ and used as tool to promote, describe and explain technological services, or products (say, apps) to the consumers and other concerns. This is getting popularity in the education field because it stimulates the cognitive processes of thinking, reasoning, problem-solving, decision-

making and creating what we call the Bloom's Taxonomy, and which, in turn, call the Bloom's Digital Taxonomy (BDT) (Ray, 2021). Videos play a big role in implementing BDT because it takes students beyond recall-and relate activities. Use videos to engage viewers with more complex themes, and facilitate further engagement with the content (Yousefi, 2014; Stutchbury and Woodward, 2017; Hadijah and Shalawati, 2021). According to the shiftelearning (n.d) students are of comfortable consuming content through videos than reading or listening to it because it provides tutors with the opportunity to present content in an engaging way using the real-life stories and scenarios. Students are used to social media and skilled in using the meme videos. Concept video is made of piece of content which gives students a full control as he/she can pause, rewind, fast-forward, or restart the steaming to repeat, skip, or focus more on central to the concept in the smartphone, and in this way, it motivates to the learners. Guo (2013) conducted a study on flipped classroom using content or lecture videos are over 12 minutes and found students miss out key materials or attend classes unprepared as they do not watch videos posted in their courses. Therefore, it was found that videos over 12 minutes length often have limited views. Same result was found in the study by the Georgia Institute of Technology, and Lin et al. (2017) found that accessing the videos by the students' decreases when videos become longer in length. Guo (2013) found the optimal video length should be less than 6 minutes.

3. Aims and objectives

The main aim of the current research is to study on learning through concept videos, and develop a framework for BOU to use the concept videos as one of the resources. This also achieves following specific objectives:

- i) to ascertain how students use existing BOUTube videos, and the check the usability for their studies;
- ii) to collect feedback on new form of mobile compatible videos i.e. concept videos (transformation of texts in videos) for using in the smartphones;
- iii) based on i) to ii); to develop a model for learning through concept videos at Bangladesh Open University.

To this end, we investigated the following research questions:

1. *To what extent, (a) are the students prefer to use existing long-duration broadcast videos, and (b) effectively the videos helping students in learning?*

BOU refers students to use BOUTube videos and/or web-TV for their learning, and tutors provide links of the videos as one of the learning resources. They may have some problems or may fail to use those videos in the mobile device. Therefore, to find out the answer of this research question is quite relevant.

2. *What changes are required in the successful implementation of (a) students' feedback and (b) explicit modification of videos for using in the mobile technology?*

This research question concerns the extent to which BOU implements the modified videos for using in the learners' mobile device. Digital technology has been changing like anything: Web 1.0 for emailing, then Web 2.0 for social media, and finally, Web 3.0 for Artificial Intelligent (AI). This development of technology allows us to incorporate innovative and cost-effective ways to prepare video-based learning resources for using in the distance education system. Studio concept has been changed, and mobile recorded video is showing effectiveness. For instance, NDTV in India broadcast mobile recorded videos and got utmost popularity for proving prompt and instant delivery of news. Smartphone has been the part of human life. In this way, this research question is also considered as the appropriate, and we need to find the answer which is likely to help for developing the desired framework on Concept-Video Mediated Learning (CVML) for BOU.

4. Method

i) The participants

The participants of this research are of students of programmes of the BOU Open School. Normally, students physically visit to Regional Center (RC) for different administrative information. They were requested to participate in this research. In addition, one study centre in the catchment area of the RC was selected for data collection.

ii) *Study design*

Under this study, concept videos were produced on Finance subject – the teaching subject of the 2nd author – incorporating texts and animation, which, have the duration of 2 minutes and are of low resolution so that learners can use that in their smart-phones. This video was anchored by the 2nd author and recorded in the Media Unit at the Dhaka RC using the smartphone rather using the high pixel broadcast camera, and edited with the open-sourced video editing software. Subsequently, both authors analyzed and incorporated the pedagogical inputs. The video was linked to the curriculum of School Secondary Certificate (SSC) of the Open School of Bangladesh Open University. Previously TV broadcasted videos are being broadcasted through web-TV and the duration of most programmes are ranging from 20 to 23 minutes with high resolution. Mobile recorded concept video prepared by the 2nd author and another broadcast video of 22 minute duration were selected for his study. FGDs were conducted with the students of the school programmes. The purpose was to understand their perception, feelings, thoughts and valuation of usability of concept videos. Discussions in FGDs attempted to cover all the objectives. 3 (three) FGDs were conducted for this research: 2 (two) in RC-run Media Unit and 1 (one) in West and High School, a designated study centre of the SSC programme.

iii) *The instrument*

A checklist was used for collecting qualitative data. This study used a 5-point Likert-scale structured questionnaire to acquire the students’ views, and perceptions on two types of videos. To find out the perception data we arranged questionnaires like as Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2 and Strongly Disagree =1. SPSS statistical package has been used to analyze data and to draw conclusions. In this study, we had chosen 3 criteria separately, a) we had selected 9 questions in perceptions on usability of video, b) we had select 9 questions on suggestion for improvement of video and c) we had chosen 5 questions in perception on delivery of videos. In the FGDs, broadcast video was played and participants were supplied the questionnaire to fill-up. Then concept video was played and supplied the same blank questionnaire to fill-up. Data was analyzed in an effort to explore the perceptions of learners regarding two types of videos. Mean and standard deviation (SD) were calculated for each item and compared. Scores have been used for describing collected data. In mean scores, higher scores implied the higher effectiveness of videos for students’ learning and lower scores implied lower effectiveness.

5. Findings

Majority of respondents participating in FGDs and interviews expressed their views in favor of concept video over lengthy broadcast video. They mostly liked the characteristics of the concept video. Referring to aspects of smartphone, student said, “I don’t watch TV, smartphone has been my life. I am very much used to and you can say addicted in meme videos which are really short and easy to share to others. Likewise, concept video shall have the same thrust within the students’ community”.

Following table illustrates differences between broadcastable traditional video lecture and concept videos

Aspects	Broadcast Videos	Concept Videos
Duration	Long: 20+ minutes	Short: 2-3 minutes
Text	Descriptive	Transformation of texts only
Resolution	High resolution	Low resolution
Sharability	Time consuming in sharing	Easy to share through mobile

i) *Demographic analysis*

44 Open School learners participated in this research of which 28 male and 16 female (Table 2). 57% belongs to age group 15 – 24 years, 35% are in the age group 25 – 34 years and 8% falls in the age group 35 – 45. Respondents are mainly of younger stage who are familiar with the smartphones (table 1).

Table 1: Demographics of respondents

Items	Details	Number	Percentage
Gender	Male	28	36%
	Female	16	64%
	15 – 24 Years	31	31

Age Groups	25 – 34 Years	19	19
	35 - 44 Years	4	4
	45 - Above	0	0

ii) *Usability of video*

In the FGDs, mentioning five devices, the students were asked whether they have access to these devices: button phones, smartphones, tablet computers, desktop computers, and laptops computers. They provided their answer one by one, and found that smartphones had been the most popular ICT device among the students. In this way, video clips can assist through visualizing the concept and become powerful than texts. With the growth of digital technology in recent years, the range of opportunities is now better than ever before. These days, we can make video resources readily available online, and teachers can make of them in a much more integrated way. Similarly, students can use them anytime and anywhere. Like so, YouTube has been the best teacher to the students of these days. Table 2 illustrates students' agreements of the usability of the videos in learning.

Table 2: Usability of videos

SL	Items	Broadcast Video		Concept Video	
		Mean	SD	Mean	SD
1	I feel boring while playing the video	4.07	1.66	3.33	0.77
2	I use video in my laptop and/or desktop	3.81	1.85	3.61	1.17
3	I use video in my mobile	4.30	0.90	4.89	0.86
4	I face difficulties in downloading video	4.42	0.50	3.48	1.23
5	Video is lacking of required animation and images	4.02	1.01	4.00	1.68
6	Video make the concept interesting	3.44	1.76	4.27	0.82
7	Concepts are understandable from the video	4.74	0.44	4.89	1.23
8	Video enhances the topic that tutor taught me	3.74	0.45	3.23	1.43
9	There are more related issues in the video that my tutor taught	3.02	1.49	2.86	1.54

One student said, “I enormously use YouTube videos for entertainment, and also fond of playing video of BOU teachers for my studies although face difficulty in downloading and huge cost incurrence for data. Concept video must be very abstract so that we can repeatedly watch them for our studies”. Survey data also presents the same because students have agreement on boringness on lengthy videos (mean 4.07 and SD 1.66) whereas agreement of positive as it is near to the neutrality (mean 3.33 and SD. 0.77). Using concept videos in the mobile is preferred (mean 4.89 and SD .86) with compared to broadcast videos (mean 4.30 and SD 0.90). They have agreement in favor of concept videos which are of interesting and understandable and easily downloadable as were indicated by the mean values and SD score (table 2).

iii) *Suggestion for improvement of video*

Table 3 illustrates the suggestion for improvement of video. Learners suggested the video with required audio and visual effect on the relevant topic. The audio-visual effects are of beneficial as it makes learning time-efficient and instrumentally sound. They have agreement on concept video as is displays more information (mean 4.21 higher than broadcast value 3.55), and students also suggested for display of information texts, and visual effects on concepts rather the speaker (table 3)

Table 3: Suggestion for improvement of video

SL	Items	Broadcast Video		Concept Video	
		Mean	SD	Mean	SD
10	Display main information using texts	3.55	1.73	4.21	1.32
11	Segmenting the video into parts	3.68	1.78	4.33	1.17
12	Eliminate extra information	3.58	1.05	3.67	1.00
13	Sound effect of the relevant topic is required	3.78	1.67	3.76	1.27

14	Visual effect for the relevant topic is required	4.58	0.5	4.33	0.85
15	Visual emphasis on the concepts rather the speakers	2.6	1.56	2.71	1.71
16	Avoid redundancy in discussion	3.42	1.59	4.07	1.24
17	Low resolution for mobile compatibility	4.20	0.46	4.81	1.38
18	Transformation of texts	2.14	1.14	4.63	1.07

Graphics and sounds engage multiple senses, therefore learning is more effective, and reduces cognitive load by taking away the stress, boredom, and frustration of trying to decipher meaning from a text-heavy slide with irrelevant images. Students' agreements for both the videos are almost same as illustrated in the table 3. In regards to resolution the participants passed their opinion on the concept video (mean 4.81 and SD 1.38) over the broadcast video (mean 4.20 and SD 0.46).

They also treated the concept video simply as the transformation of text and showed their strong agreement on it (mean 4.63 and SD 1.07). This result also supports the research by Yin (2021) and he found video developer needs to add innovative content and ideas to the content so that it can create the works that are valuable, worth watching and worth repeating which is good for in-depth learning, thinking, and practice.

iv) *Delivery of video*

In our survey, 57% respondents are of age group 15 – 24 years, and 35% are of age group 25 – 34 years. Pearson conducted a survey in 2018 and found that 59% of Gen Z generation (born in the mid to late 1990s through around 2010) and 55% of millennials (born in the early 1980s to mid-1990s) have a clear preference for video over in-person learning, apps, games, or even books, giving video a clear advantage in the age groups making up most of the modern workforce today (Global Research & Insights, 2018). Table 4 illustrates the delivery of videos.

Table 4: Delivery of Video

SL	Items	Broadcast Video		Concept Video	
		Mean	SD	Mean	SD
19	I prefer receiving video through email	2.77	0.43	2.45	1.69
20	I am comfortable to use video from BOUTube	4.07	1.47	3.62	1.29
21	I would like to receive video through mobile app with notification	4.41	1.68	4.49	1.01
22	I would like a SD card with video	3.24	1.5	3.46	1.58
23	I think, pen-drive is the best way to get video	3.23	1.49	2.85	1.41

The students were asked which of the social media they access to. It was found that all of them use internet for social media, and Facebook, YouTube and WhatsApp are of most popular among them. All these are self-integrated technology. Among them most use media is Facebook. Delivery of video is very important because it provides learners with the access to the video. Most preferred option is of mobile app with notification (mean 4.41 and SD for broadcast video; mean 4.49 and SD 1.01 for concept video) for the delivery of videos. Here their agreement towards the concept video. BOUTube is chosen are preferred video delivery channel (mean 4.07, SD 1.47 for broadcast; mean 3.62 and SD 1.29 for broadcast video). But disagreement has shown in delivery through email, SD card, and pen-drive.

6. The Framework for Concept-Video Mediated Learning

BOU prepares a video streaming mobile app accessing the videos with notification. Morris (2020) states that in order to develop concept videos the instructors should:

- i) think actually what needs to be delivered in the video;
- ii) based on the plan, he/she needs to make an outline;
- iii) prepare an index cards with specific topic;
- iv) prepare short instructional videos on each index card;
- v) name each video for easy tracking;
- vi) once completed, videos can be uploaded in a file folder, embedded, or listed as links for easy access;

The current study has tremendous implications for policy and practice on the use of technology-enhanced distance learning (TEDL) for BOU. The findings have implications for policy formulation and implementation, and also preparing the guidelines and strategies for adopting concept videos for the existing or new programmes of the BOU. The findings present a picture on the TEL scenario at the BOU showing the areas which need to have interventions for deploying the technologies, with due consideration to the context. A Framework, which emerged from this research work was developed to address the desired use of concept video at the BOU and for improving the TEDL practice at other open universities in developing countries. It was also found that Youtube are the mainstreamed technologies at BOU, and other technologies are being used as supplementary. BOU, therefore, needs self-dependent, cost-effective, user-friendly, and sustainable TEL. In line with this following framework is proposed for the implementing the concept video:

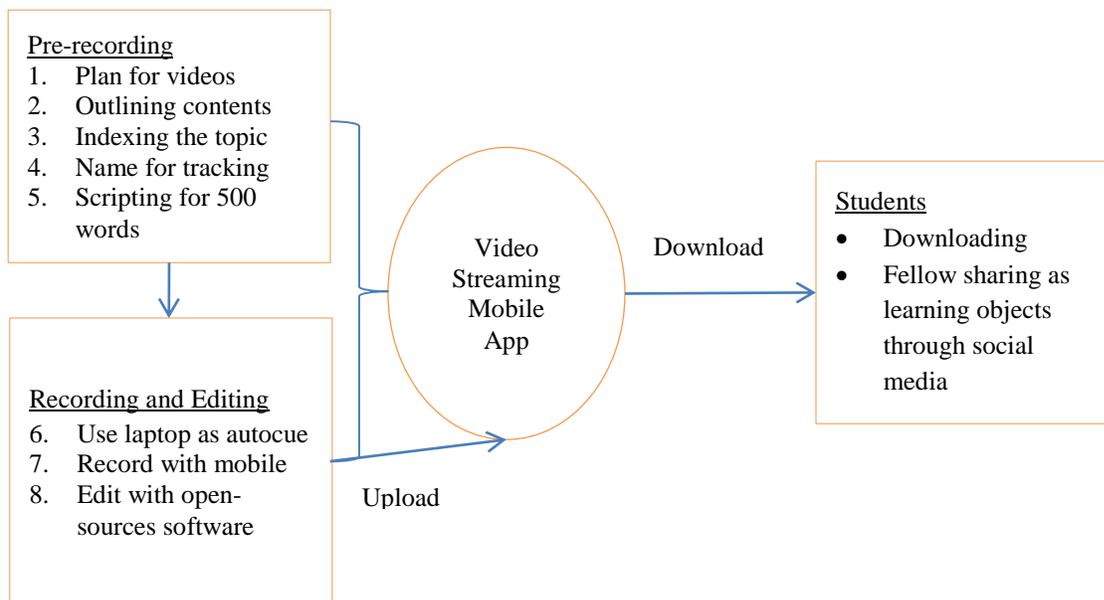


Fig 1: Framework for Concept-Video Mediated Learning

7. Conclusion

It is clear that students perceive benefits of learning through concept videos especially in understanding the topics. It is more interesting as it is supplement of texts with animations and pictorial presentations. In this way, concept video becomes more interesting, and students play it as long as the topic is fully known. The BOU framework for Concept-Video Mediated Learning through the apps is likely to let learners reap the advantages of JIT (just-in-time) and OD (on-demand) environment for their learning. Short and text-transformed videos shall encourage learners for rapid knowledge check. In addition, through making the concept easy the short duration in response from the app notification it is also likely to motivate students to review whole lessons as and when they want to. It is possible for BOU through implementing the proposed framework.

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Acknowledgement:

Sohail Ahmed, Sr. Video Specialist Grade-1 Media Center, Dhaka who supported of conducting FGDs for this research