

Learners' Attitudes Towards Use and Effectiveness of WebTV as an Instructional Media at the Bangladesh Open University

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Abstract:

Bangladesh Open University (BOU) introduced WebTV - a video-based interactive educational web portal - along with the other media such as print, radio-TV broadcasts, and tutorials. It was visualized that WebTV can result in significant gains in basic and higher order learning of the BOU students as most of them use internet in the smartphones. The objective of the WebTV was to provide learners with access to more learning information. Introduction of technology is not an option for BOU; it is obligatory by the BOU Act 1992. It introduced technology and subsequently, it assessed the impact and customized as required (not clear). Therefore, at this juncture, this study is significant for the BOU. The study employed two data collection methods: focus group interviews (this is not included in the Research Methodology, and nothing on this is included in the Results section) and survey through an attitude scale. A survey questionnaire was administered on 212 learners to capture their perceptions on WebTV. This sample though is quite low in relation to the number of total university enrolment. Participants of this study were interviewed and the interviews were recorded for the purpose of analysis. In this study, the participants are BOU students who were enrolled in the BOU programmes and attended in the Regional Centres (RCs) for seeking information. The findings of the study indicated the challenges that the participants faced: expensive and technical difficulties in mobile. Data shows statistically significant increase in the use of WebTV when students are informed beforehand. The impact of WebTV on the cognitive development of BOU students was tremendous.

Introduction

Information and Communication Technologies (ICTs) have transformed teaching-learning processes from being highly teacher-centered to learner-centered, and do increase learning gains in students generally. They also provide learners with opportunities to develop their creativeness, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills. Internet technologies are having a significant impact on the learning industry (Rahman, et al, 2015). Internet technology combines all other technologies together, and has dramatic impact on teaching and learning. Educationalists are encouraged to incorporate technology into their teaching and learning practices to supplement and expand traditional classroom delivery with technology-driven tools. Instruction delivered via electronic media, like any other instructional process, requires

the deployment of evaluation to measure its effectiveness. One of the challenges in working with instructional media is that developers and educators are confronted with a rapidly moving target in terms of information technology's capabilities. At BOU, there has been increasing understanding of how to deploy technology tools and resources to achieve particular educational objectives. WebTV has been a particular educational technology which is being used effectively for all educational programmes. Ural (2007) states that successful implementation of the distance education applications in traditional universities will affect the mega education system in a positive way. In this vein, BOU's application of WebTV may draw the attention of traditional universities to introduce this technology in their course delivery. This is one of the motivations of conducting this study. For this reason, more scientific studies and applications about open

and distance learning (ODL) are required for integrating new technologies and curriculums to the system. To this end, it is important to determine opinions and attitudes of distance learners towards current distance education technologies as web television.

BOU has two forms of video delivery for distance education, namely (i) the delivery via the national TV – Bangladesh Television (BTV) – and (ii) the delivery via the WebTV. The WebTV delivery of distance education video was phased in at BOU over the last two years. At present all distance education courses are delivered with WebTV video at BOU. BTV has provided a chunk for BOU only for one hour in the morning; but BOU can use WebTV for 24 hours. Yeasmin et al. (2014) finds that BOU video lecture on BTV are of worthy and effective to the learners in completing their studies. As the chunk is limited and time allocation for individual course is not sufficient with compared to requirements. Still now second form of video delivery via WebTV has not been studied although it already has passed two years. Now, it's time to explore learners' attitude to know its usefulness.

Objectives

We looked at WebTV – one of the new and emerging Information and Communication Technologies (ICTs) in the area of distance education. This evaluation study aimed to examine the attitudes of students enrolled in BOU programmes with the video component delivered through the WebTV system. More specifically, the study had the following objectives:

- ✓ to determine how webTV, being used in conjunction with appropriate pedagogies and learning resources, can significantly improve teaching and learning at BOU;
- ✓ to ascertain various interactive ways of using webTV for attaining learning gains;
- ✓ to identify the constraints being encountered by the distance learners;
- ✓ to look at the innovative dimension in using webTV for learning, and its impact on enhancing performance;
- ✓ based on i) to iv), to discuss the potentials for further research and policy-making on webTV vis-à-vis distance learning.

Literature Review

There are paradigm shifts in education because technologies are being used in the process of teaching-learning. But, one of the issues in technology-mediated education is that learners need to learn how to adapt to technological change (Waetjen, 1985; Boser et al., 1998). Most of the open universities use broadcast technologies in their delivery system; but these are expensive. Now-a-days, by using internet technology, they are broadcasting through web which has been found cost-effective and worthy for learning gains by the students. Rasool (2016), in his inaugural speech of the capacity enhancement programme on open educational resources (OER) at the BOU on 28 August 2016, said that reputed universities are offering distance education courses through technologies along with their face-to-face (f2f) classes. Therefore, there is convergence between f2f and distance courses, and the gap has been decreasing day by day due to deployment of technologies in education. Deployment of technologies by the conventional universities started long ago and accordingly, some evaluation studies were conducted. Lilja (2001), Moore & Kearsley (1996) and Simonson et al. (2003) did comparative evaluation of traditional in-classroom instruction with video-mediated distance education, it was found that distance education can be as effective as traditional in-classroom instruction. DeBourg (2003) examined the use of videos in distance learning course on nursing and found videos to be effective for students' learning gains. Videos are also used in other subjects and different researchers have evaluated those video-mediated programmes. For instance, Hilgenberg and Tolone (2000) did evaluation of student attitudes toward distance education with video, and it was found that students had generally a positive attitude toward the distance learning technology and their course experiences. The development of prototype systems and teaching strategies for distance learning and classroom with video has received significant attention because the recent focus has been on implementation of constructivism and connectivism learning theories (McMullin & Owen, 2002; Rahman, et al. 2015). Recently, the streaming media segments in distance learning system have received greater attention. For instance, the study by Green et al. (2003) compared the student access patterns and attitudes toward three learning sessions which had streaming media, and found that access and attitudes were largely uniform across the different sessions. This

present evaluation study is complementary to the reviewed literature in that the authors examine the attitude of the students towards video lecture delivery through BOU webTV.

Methodology

Research methodology was decided after looking the nature of the research and the objective formulated. Survey method has been employed for this paper. In this method variables described as exactly as possible. This research was conducted by questionnaire and BOU student's attitudes towards WebTV in their courses of studies run by the BOU at one of the core existing technologies. The findings of the study have been evaluated within mean of every item with dependence to the descriptive case study model and standard deviation was also used to draw conclusions. The data were analyzed using the statistical program of Statistical Package for the Social version 21. Descriptive statistics including arithmetic mean and standard deviation were used to identify the level of effectiveness of videos through WebTV to students learning in the different academic levels. Mean scores were calculated for each item. In mean scores, higher scores implied the higher effectiveness of video presentations for students' learning and lower scores implied lower effectiveness.

Population and Sample:

This study contemplates the specific form of the delivery modes employed at BOU what is called convergence of face-to-face and distance mode at the Dhaka Regional Center (DRC) where this evaluation study was conducted. About 3,000+ enrolled students at DRC who attend f2f and get the video lectures through BTV and WebTV. Based on the size of the population the same was determined as 200+. Most of the students are from same ethnic background. Therefore, they would represent the population.

Tolls Used:

A total of 212 students took part in this study through questionnaire used Likert scales to investigate attitudes towards BOU webTV and provided open ended responses for additional comments. Survey administrators identified the students using smartphones with internet connection and frequent visitors of BOU webTV.

Data were collected by a questionnaire which was designed by the first researcher (first author) and checked by his PhD supervisor – the second author. A questionnaire with two sections, formed by questions about personal information and webTV programmes was prepared and used. A total of 50 questions on attitudes with the following distribution of topics were asked: access to BOU webTV (10), attitudes towards usability (10), attitudes towards technical aspects of programmes (6), attitudes to linking of distance education (6), attitudes towards navigation (5), attitudes towards interaction with instructor and fellow students (5), attitudes to effectiveness of webTV for ODL (6). 5 questions were about the personal information section (gender, age, grade, study center, living place). In questionnaire, there were five choices as “strongly agree”, “agree”, “neutral”, “disagree” and “strongly disagree”. These choices had values from 5 to 1.

Procedure of Data Collection:

Data were collected the administrator who was trained by the first author. The respondents took part in this study those who have the smartphones with internet connection.

Results

Most of the famous universities in the world are making available the classroom videos in the web and having tremendous benefit on students' performance. Flores & Savage (2006) find that real-time lectures recorded on video and streamed over the Internet are of useful supplement to non-classroom learning and students like many of the features streaming lecture video provides outside the classroom. By providing students with flexibility to review material they have already seen in a real-time lecture, video complements the classroom experience in much the same way as a textbook, but with a dynamic emphasis. Moreover, streaming video lecture has a positive impact on student performance, as measured by their cumulative final grade. In line with is, our study also has some positive and negative attitudes on the BOU webTV which are very useful for BOU policymakers. That's why; the study has tremendous implications on policy and what may lead the mainstreaming of webTV for the nation.

Access to BOU webTV

As BOU students are new to webTV system, their preferences were high. According to the Table 1, we find there is a general perception amongst the students that there exist optimum degrees of affective support as the BOU webTV is well accessed to them.

Table 1: Access to BOU webTV

Items	N	Mean	SD
I can easily connect BOU webTV	193	3.78	0.993
I can connect BOU webTV without registering in the system	182	3.93	1.189
I can watch BOU webTV with low speed connectivity	201	3.41	1.387
I connect BOU webTV through laptop and desktop	182	3.74	1.139
I connect BOU webTV through smartphones	187	3.72	1.348
I can watch BOU webTV at my work	185	3.55	1.351
I can watch BOU webTV at my home	186	3.9	1.103
BOU webTV allows me study at travel on-the-go	188	3.44	1.43
BOU's webTV services are usually accessible from anywhere in the world with a suitable internet connection available	182	4.09	1.109

Table 1 shows that students have agreements on accessibility aspects of the BOU webTV as they can access without registering (mean, 3.93 & SD, 1.189) with low speed connectivity (mean, 3.41 & SD, 1.387) in anywhere (mean, 4.09 & SD, 1.109) in the world. Students can connect the BOU webTV through desktop, laptop and smartphones at travel on-the-go. All the items show mean value 3+ that means BOU webTV has been well accessed to the learners.

Attitude towards WebTV

a. Attitude towards usability

Bassili (2008) finds that attitudes towards the option to watch lectures by streaming video are related to students' motivational orientations to watch them online is related to their cognitive strategies. The extent to which students watched them online was not related to examination performance either alone or in interaction with any motivational orientation or cognitive strategy. Table 2 shows almost similar results as mean values of the cognitive related statements gained the positive response from the students.

Table 2: Attitudes towards learning usability

Items	N	Mean	SD
I use BOU webTV programmes for my courses of studies	185	4.19	0.788
I am very much fond of BOU webTV because it supports my studies	188	3.41	1.249
BOU webTV increased the access to more learning information	187	3.54	1.094
BOU webTV uses texts to distribute educational content to students	188	2.78	0.933
BOU webTV programmes are course specific and well-scheduled	191	2.57	0.965
My peer students have access the internet on cell phones, tablets, and other mobile devices	184	3.88	1.012
BOU webTV more useful than on air broadcasts	186	3.52	1.159
BOU webTV provides repeated opportunity for watching video lectures	185	3.49	1.372
I believe that webTV is the future of learning	186	3.47	1.159
BOU webTV has been an useful as I can share the programme with my friends	184	3.88	0.747

The programmes what are broadcasted through BOU webTV are found course related (mean, 4.19 and SD, 0.788) and students prefer videos online than on-air broadcasts (mean, 3.53 & SD, 1.159) as they can repeatedly watch (mean, 3.49 & SD, 1.372) on the web. Yenilmez (2008) finds that students' desires repeating broadcast of mathematics television programmes for their learning. In line, BOU webTV repeats the programme and alternatively, it allows learners to download so that they can use it as required. Students are fond of programmes as it supports their studies (mean, 3.41 & SD, 1.249); but they have disagreement on the videos are not well-supported by the texts (mean, 2.59) and not well-scheduled (mean, 2.57). The programmes are also shared within the students.

b. Attitude towards technical aspects of programmes

Sometime good programmes through streaming may not be well-grounded because of technical difficulties. Table 3 reports that the respondents showed their agreement on quality of the video in the BOU webTV. It means that the respondents had not experienced falls short of the video quality (mean, 3.68 & SD, 1.335). The data also suggest that the BOU webTV programmes do not have technical difficulties (mean, 3.17 and SD, 1.467). The analysis of the open-ended comments (3) reveals that visual resolution is low. Recently, BOU studio has been digitalized and equipped with the streaming capacity with high quality.

Table 3: attitudes towards technical aspects of videos

Items	N	Mean	SD
I find visual quality of BOU webTV programme is good	178	3.68	1.335
I find BOU webTV audio quality is good	181	3.48	1.373
I find BOU webTV programmes are of animations of learning point	188	3.8	1.291
BOU webTV has enhanced my access to knowledge resources	189	3.51	1.39
I encountered technical problems when watching the BOU webTV	191	3.17	1.467
BOU's webTV is well-linked to my courses of studies	187	3.94	0.948

webTV system for the purpose of distance education provides students with additional access to knowledge resources and respondents expressed their strong supports (mean, 3.51 and SD, 1.39) Interestingly, the technology for the audio component in the webTV appears to already have matured (mean, 3.48 and SD, 1.291).

c. Attitude towards linking of distance education

Greenberg and Zanetis (date mentioned) state that the rapid availability of video tools supports the changing role of the educator. Traditionally an in-person mentor, teachers will increasingly perform the mentoring role both in person and over distance, across geographies and time and across different media. This will turn the world into a universal multimodal classroom, giving learners, educators, and their institutions access to vast amounts of content worldwide. Broadcast and streaming video has been essential elements of that multimodal learning model. The latest expectation for video is that just as 21st century learners need to learn to be global citizens and to collaborate with others, learner-generated video is a powerful tool in the hands of students.

Table 4: Attitude to linking of distance education

Item	N	Mean	SD
I prefer the BOU webTV delivery on internet than webTV broadcast	189	3.53	1.055
I prefer the BOU webTV delivery over the web in other YouTube channel in the web	190	3.08	1.223
I prefer to watch the BOU webTV in real time while the tutorials is being held on study cen	188	2.6	1.269
I prefer to watch the webTV independently at home	190	3.62	1.148
I liked the anytime/anywhere convenience of taking a webTV-enabled distance education cou	189	3.68	1.311
BOU webTV is interactive and it is useful for learning gains	188	4.32	0.666

BOU webTV has been found very useful for learning gains as the respondents showed the strong agreement (mean, 4.32 and SD, .666). Standard deviation has been low that means options vary among the respondents to a higher extend. Students liked the webTV programmes and also availability of programme in the YouTube channel (mean, 3.08 and SD, 1.223).

d. Attitude towards navigation

Chat 5 reports the results for the five survey items relating to the navigation of the BOU webTV. The results indicate that respondents showed strong agreement (4.41); but they have disagreement on the control of the downloaded programmes. The respondents' agreement somewhat stronger what shows that they are able to do it at their own (mean, 4.13 and SD, 1.114)

Table 5: attitudes towards navigation

Item	N	Mean	SD
I can download videos available from online after live broadcasts	188	3.24	1.153
Having visual-based table of content is helpful for learning gains	172	4.41	0.665
I liked having control over the instructional flow for the downloaded programme	169	2.62	0.873
I don't need to register to download BOU webTV programmes	191	3.8	0.932
I can download webTV programmes without someone else's help	191	4.13	1.114

Statistically significantly more favorable student attitudes are that the students were possibly not aware of the full range of navigation options in the webTV interface. The Internet as a video streaming platform has been imperative compared with television.

e. Attitude towards interaction with instructor and fellow students

Brecht & Ogilby (2008) find that students broadly accept and use video lectures as a form of computer-based instruction and as an enhancement of traditional classroom courses.

Table 6: Attitude towards interaction

Items	N	Mean	SD
There are sufficient opportunities to interact with the instructor	188	2.12	0.577
There are sufficient opportunities to interact with fellow students	186	2.51	0.949
I prefer to ask the instructor questions in real time	188	2.64	1.155
I prefer to ask the lecturer questions after watching the video lecture, e.g. mail or phone call	188	3.65	0.961
I would enjoy to participate in asynchronous communication with classmates and the lecture	186	3.58	0.843

Participants perceived the opportunities to interact with the teacher as only slightly sufficient in the webTV programmes that they had taken (mean, 2.12 and SD, 0.577). The opportunities for interaction with fellow students were perceived as mediocre (mean, 2.51 and SD, 0.949). The webTV respondents had somewhat more positive attitudes toward the opportunities for interaction with the instructor and the fellow students that they had experienced (mean, 3.58 and SD, .0843). Results indicate that the respondents deemed synchronous interaction with the instructor as being of low importance and

expressed a significant preference for asynchronous interaction with the instructor.

f. Attitude towards effectiveness of webTV for ODL

Mendoza, et al. (2015) finds that instructors and even students rely or use educative videos to learn, compare and understand concepts. The use of video is only beginning to meet the needs of today’s and tomorrow’s learners. Using videos in teaching is not new. It was proposed that videos are effective when used to develop information literacy, using a student survey to measure the effectiveness of video lectures. Video based materials boost students’ creativity and cooperation. Access to video can help motivate students and create a distinctive context for their learning experience.

Table 7: attitude towards effectiveness

Items	N	Mean	SD
I learned a lot from the webTV programmes	191	3.77	1.034
The information was presented effectively in the webTV programmes	190	3.56	0.845
The video lectures helped me to stay focused during the instruction	180	3.68	0.957
The way the webTV programmes was shot pointed me to the most important information	189	3.77	0.79
Watching the webTV programmes more than once helped me to learn.	174	3.66	0.958
The webTV-based distance course was at least as good as a regular class instruction	191	3.64	1.368
I would recommend webTV-based distance education courses to others	201	3.47	1.204
Overall webTV-based distance education course was worthwhile	188	3.7	1.159

In relation to the cognitive supports for the learners, the BOU webTV (mean, 3.77 and SD, 1.034) as the anchors’ presentation influenced to stay watching the videos (mean, 3.68 & SD, 0.957). In addition, learning points are highlighted and they recommend friends to watch the videos (mean, 3.47 and SD, 1.204). The respondents found the programmes are worthwhile for their courses of studies (mean, 3.7 and 1.159).

Conclusions and Future Directions

We have conducted an evaluation study of the attitudes of students towards the webTV for delivery of distance education courses at the BOU. The analysis of the survey responses indicates that the overall satisfaction of the respondents with the BOU webTV is good. However, there are a number of significant differences in the attitudes of the technical aspects. The respondents perceived the video quality statistically significantly higher. The respondents, on the other hand, had statistically significantly stronger preferences for watching the video lectures asynchronously and had statistically

significantly stronger preferences for controlling the instructional the video lectures after down loading the broadcasted programmes. Interestingly, respondents assess their overall satisfaction with their video distance education experience. This evaluation study indicates that with the present webTV technology, there is advantage in terms of the overall perceived student satisfaction. As the webTV technology allows for the streaming of higher-quality video with a more user-friendly technology, it appears that the webTV lecture delivery has the potential to lead to overall increased perceived satisfaction of the distance learners.

It is recommended that BOU develops an official policy regarding the use of webTV for widening the access technology. The policy should recommend:

- webTV programmes are interactive;
- webTV may be used for some of the programmes;

According to the results of the study; BOU students have positive attitudes towards broadcast quality, visual items, examples, broadcast times, anchoring of television programmes. But students have some negative opinions about technical aspects of the webTV programmes. In spite of that, BOU should run webTV mediated more programmes as it is user friendly and linked to smartphones. The results of the study revealed that the level of the effectiveness of using video presentation to student’s learning is highly effective.

Future direction of research

It would be desirable to examine the impact of BOU webTV on student performance within a given content area and with the same video lecture.

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