

Potential Usefulness of Video Lectures as a Tool in Improving the Online Learning at the Post Graduate Level: A Case for Design Domain Students

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ABSTRACT

Distance learning in modern day requires online educational systems as a major support. During recent COVID19 pandemic, educational system survived through online educational systems. Video lectures have been considered a great utility as part of system. The current research focused on MSc Sustainable Environmental design students who come from a variety of formal design and engineering educational systems and explored the usefulness of video lectures given to technical master's level students. As a result, they faced major issues to adapt to the online system immediately and encountered communication and comprehension problems throughout the lecture session as a result of internet and related connectivity problems. The researcher used independently created video lectures for the relevant subject areas and distributed them to the students via subject-specific Whatsapp groups and a Youtube channel. In a later survey, students were asked whether the lectures had helped them understand the material better and had generally improved their learning process. Over 80% of the students expressed appreciation/satisfaction for the work and asked that it be incorporated into the broader system. The students were beforehand informed of the goal of the research and an online questionnaire was used to collect the necessary data. It was concluded that video lectures should be regarded as an essential component of the lecture sessions and that they must be made available beforehand to ensure better lecture delivery. Additionally, it was recommended that the current system be improved to accommodate the accessibility of these video lectures through the portal. For teachers to create high-quality video content that can adequately cover the subjects and courses taught, training is required.

Keywords: Video lectures, Online education, Design domain students, AIOU, MSc students

INTRODUCTION

Education lies at the heart of society towards its existence. It plays a vital role in improving and developing individuals to serve the society and help people groom (Mhamdi, 2017). Technical education is an integrated component of the overall educational system and helps the society improve their overall infrastructure and services with application of technologies (Scagnoli, Choo, & Tian, 2019). People from these domains were trained in formal educational systems and have to go through a formal training as well as exposure to be ready to embrace the online educational systems. Once going in higher education, they face issues in online educational systems without proper training & hands on practice. Similar issues were faced by students of MSc Sustainable Environmental Design programme in AIOU due to shifting to online mode while no formal training was deployed due to pandemic conditions. Online educational systems require extensive integration of skill set and knowledge through modern day technologies. Video forms of lectures are considered as an important component in online

mode of education (Alpert & Hodkinson, 2019). It provides students with capability to access the content of the lecture/presentation through digital tools like Laptop/desktop/cell phone to learn as per their ease (Brame, 2016). They are also easy to carry on digital tools. Integration of video lectures in few subjects was done but student expectation vs satisfaction was never explored in the case of environmental subjects taught at post graduate level. Hence there existed a gap to explore the potential usage of video lectures as an integrated mode for enhancement of environmental education in online mode of teaching.

Through transformation new value added additions to the system could be achieved for the better sustainability of the system yet in process the people engaged are mostly at stake and must be engaged for satisfaction through to ensure they are being able to complete their tasks and contribute. A similar situation was faced in the lieu of COVID-19 in Allama Iqbal Open University where the transition from the video conference facility system for distance learning students of Environmental Design domain were shifted to LMS (Learning Management system) of the university refereed to as Aaghi portal. It was observed that since the transition was planned prior to COVID-19 pandemic situation and it was planned in a couple of semesters yet COVID-19 forced things to be shifted to new academic teaching system incorporating online classes and sessions. Environmental design students come from formal educational background systems through regular classes and have degrees like Architecture, Engineering, sciences and design domains. Hence they have not been exposed previously to the LMS system. Students and faculty faced a number of issues including technical and IT (Information Technology) hitches.

Hence there existed a gap of post transfer exploration on the new LMS system of these technical (MSc SED) domain students and how the existing system could be improved to improve quality of education and performance based on the provision of synchronous video lectures for the subjects. This gap was taken as the further line of action to explore and how these tools could be used as a potential helping aid to the existing online educational system for better user experience and satisfaction.

Education is a basic right of every human being. It has been highlighted through religions, philosophy and evolution of the human history that education lies at the heart of its aim and direction for the futuristic growth (Mhamdi, 2017). Distance learning has been one of the key methods of recent times in the human history to help mankind achieve their aims of higher education and knowledge without being physically present in one defined location. This added a new horizon to the canvas of education through enabling those people who were previously unable to achieve or get education due to distance or other allied reasons i.e. medical conditions, job requirements, cultural issues, religious backgrounds, etc. (Scagnoli, Choo, & Tian, 2019). Using the state of the art systems, tools and technologies like computers, internet, infra-optical devices, intra & large scale networks with integration of hundreds of thousands of devices, technology paved a whole new way forward to a whole new era of education and knowledge sharing through technology engagement (Alpert & Hodkinson, 2019). Here the consideration was simple yet challenging that every human being counts and must be educated (Brame, 2016). Visual aid in the form of graphic design, visuals, illustrations, animations and videos have opened new pinnacle of educational coverage and optimization of sharing for those in need at distance (Hong, Pi, & Yang, 2018).

Video lectures integrate the content developed through modern audio-visual integration in forms which can be shared and hence may help viewers able to learn (Hegeman, 2015). It opens better options of knowledge sharing and accessibility with focus on those who previously have not been able to access these knowledge areas as well as the teachers themselves (Liu, Relan, & Napolitano, 2020). It is critically important that students do have access to these video's along with live sessions to ensure they are able to strengthen their understanding of the material through not only listening and watching the video's but also questioning and queering about

the content from the developers or authors to ensure that there exists no confusion or ambiguity amongst the readers (Alpert & Hodkinson, 2019). Usage of clear, precise vocabulary with tone focusing on key words and with addition of helping words will also be a key factor for improving the video lectures. However the most important aspect is to ensure responsiveness through interaction with student or learners (Brame, 2016). Selection of content with focus on the targeted learning outcomes and objectives is important to usefulness of the video lectures towards better understanding (Mhamdi, 2017). The availability of the video lectures with better quality in time to ensure ample time being available to hear and listen to it prior to a live session is key to its successful usage. Content and quality of video lectures have a strong impact on the listeners and they tend to accept the ideas and the theme's in a better manner (Scagnoli et al., 2019).

In another research exploration, it was concluded that not all students use the video lectures in one single way. Some use them as an ease to understand as per their time availability to listen to it once they have time and free from allied activities. Others use it in conjunction to provided text and develop better notes and markings for further exploration and questioning. Some also used these to explore the options for making better time utilization in discussion while online session with tutor or teacher takes place (Holland, 2014). Some of the key parameters to be observed include existing knowledge of the users, their ability to comprehend the vocabulary, their access to the mediums, their control over the video content while playing and watching them but one of the most critical aspects is to ensure that they are well trained for these video lectures to be used and they have ample technical and gadgetry support to ensure they can watch them and can also listen to these (Chorianopoulos & Giannakos, 2013). According to a recent research (Yang et al., 2020), integrating lecture sessions with video lecture help deliver content to the student in a very effective way yet incorporating good will gestures from teachers has a string role to play in motivating the students to carry on with studies and improving the learning process. With recent issues of pandemic multiple researchers explored and focused on video lectures for improving the teaching process (Santos et al., 2020). It acts as a secondary addition and enhances the overall learning experience of the students as well as making more efficiency in teaching process itself. According to Rickley (Rickley et al., 2020), Pandemic of 2020 due to COVID 19 also increased the usage of video lectures and online teaching systems incorporating video lectures and the results were better as initially help the students with ease to access at any time, place and allowed usage of multiple tools and gadgets to help them explore it.

Objectives

The objectives of this study were to:

- To develop and ensure subject video lectures available were on the current LMS portal / system.
- To evaluate the students preferences for video lectures vs synchronous online LMS sessions.
- To evaluate video lectures as a tool to enhance the overall learning experience of the targeted students.

Delimitations

Considering the time and available resources, this study was delimited to only students of MSc Sustainable Environmental Design were part of data collection process who have been provided with video lectures and have been part of the online educational system for 1-2 semesters. Students who have participated in the prototyping were not included in the data collection phase to avoid any biasness.

METHODOLOGY

As shown below in figure 01, following methodology was followed:

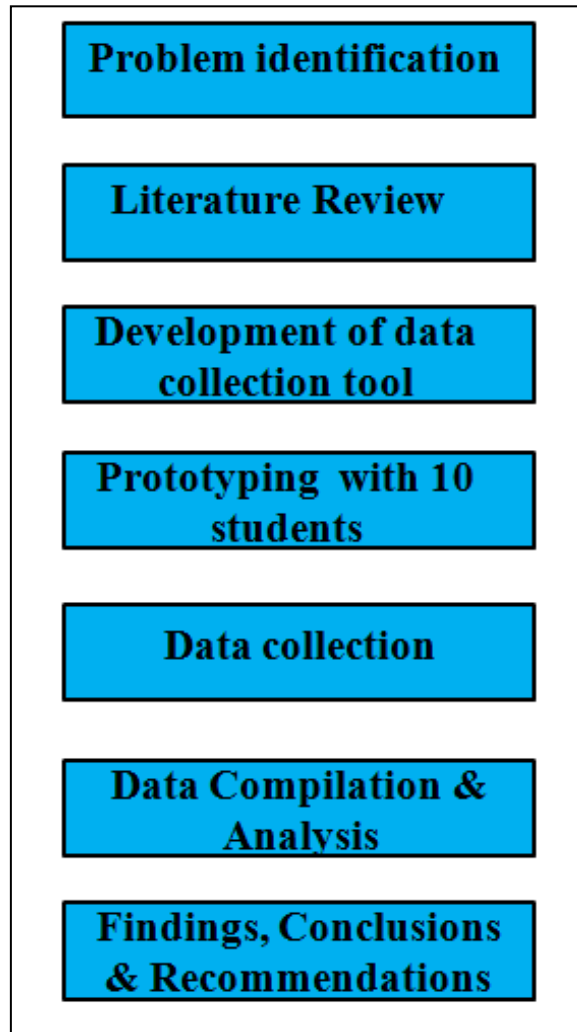


Figure 01: Followed Research Methodology

Research Design

Research design was based on hybrid research approach using online as well as through phone call data collection followed by later research phases. Based on the exploration of the existing system and issues faced by the end user, researcher identified a gap to evaluate the potential usefulness of the video lectures as a tool to improve the quality of online education. Based on the identified research gap / issue, review of relevant literature was followed by the problem identification. It mainly included research articles, publication, reference books, etc.

Data Collection Tool

With the help of review of literature and ongoing practices about the user satisfaction and evaluation systems of the students, a data collection tool was devised to collect data online using questionnaire. Questionnaire was used as a tool to collect data online from respondents. Based on the developed data collection tool, prototyping was done to ensure respondents are able to read, understand and respond the questionnaire. Later online data collection was done

from master level students at AIOU. Prior to prototyping, users were briefed about the action research and the data collection process.

Data Collection

Data collection was done using online Google Forms through sharing link of online questionnaire. It was shared with all the targeted audience as per the devised protocol for sampling. It took 14 days to collect the data online.

Data Analysis

With the help of data collection, data analysis was done to identify and quantify the user satisfaction and evaluation of video lectures as a useful tool for online educational system for master level students as well as its choice or preference as an alternate to the online synchronous lecture sessions. Data analysis mainly focused on identification of percentages of respondents for each selected option against the questions asked. With the help of data analysis and discussion with the respondents, research findings and results were developed which helped to devise inferences and finalization of research outcomes. Table 01 below shows the multiple tools used for multiple designated phases respectively.

Table 01 – Tools used in multiple research phases

S.No	Phase / Step / Description	Tool/s used for the completion of the task
1	Problem identification	Exposure and issue identification by the students in online educational system.
2	Review of Literature	Research articles, research publication, reference books, etc.
3	Data collection	Questionnaire
4	Data analysis	MS Excel for data compilation & analysis

Population & Sample

Targeted population of the research exploration mainly included the students at masters level engaged in the online educational system at AIOU in MSc Sustainable Environmental Design degree program. They mainly comprise of 75 students. Sample selection was based on the respondents who have been in the online educational system for 1-2 semesters and researcher has shared video lectures of the taught subjects at MSc level. Major audience was MSc SED students. In order to proceed ahead with data collection from the selected sampling frame, purposive sampling was used with help of online questionnaires. Targeted sample size was one batch which comprised of 30-35 students.

RESULTS

Based on the defined protocol in research methodology, data collection initiated after briefing the students about the task and taking them on-board for data collection. The questionnaire was shared to 60 respondents and 44 responded back with filling the form after prototyping done at initial stage. The collected data is shown below in Table 02.

Table 02 – Data collected and major highlighted areas

Potential usefulness of video lectures as a tool to improve the online education at Masters level.		Choices: A=Highly satisfied, B=Satisfied, C=Neutral, D=Unsatisfied, E=Highly Unsatisfied				
S.No	Questions	A	B	C	D	E
1	Video lectures were prepared for each unit of the subject	61%	34%	2%	2%	0%
2	Video lectures covered the contents of each unit	57%	39%	2%	2%	0%
3	Video lectures covered complete course	57%	34%	5%	2%	0%
4	Video lectures communicated the contents and subject matter effectively	52%	36%	5%	7%	0%
5	Video lectures were given in ample time to go through them	55%	30%	9%	7%	0%
6	Video quality of the lectures was good enough to understand the content presented	52%	39%	5%	5%	0%
7	Audio quality of the lectures was good enough to understand the content presented	50%	36%	7%	2%	2%
8	Video lectures were able to bridge communication gaps due to online & technical issues faced during online sessions	61%	27%	5%	5%	0%
9	Video lectures were working on cell phones	52%	30%	14%	0%	0%
10	Video lectures should be integral part of online teaching system	68%	25%	5%	0%	0%
11	Teacher was able to discuss the contents during the online session?	68%	27%	2%	0%	0%

As shown above, in almost all the major aspects, respondents were mainly highly satisfied or satisfied with video lectures prepared and shared in the online system and would appreciate it to be an integral part of the whole online educational system. For each subject 9 videos each covering one unit was used and shared with students. All research objectives were successfully completed. With respect to first objective, With the help of Youtube website and Whatsapp groups of the students in MSc SED subjects taught with video lectures, these files were made available. Processing at portal for these video lectures required extensive time which was not feasible within the timeline of the project. Hence alternate means were used. With respect to second objective of the study, Respondents feedback through data collection using online questionnaire established that students prefer video lectures to be integral part of the online lecture sessions. Hence their presence with online lecture session could help student grasp better understanding of the subject and help improve subject knowledge. With respect to third objective, Respondents feedback through data collection using online questionnaire established that students preferred video lectures to be made available in all subjects. They preferred it since it helped them manage time and have better discussions towards lecture sessions delivered online on the portal with more time in clarity of concepts rather than opting for going through slides. It was concluded through data collection and data analysis that video lectures

were considered as a support and supplementary source by the students. The resources helped them grab better timely understanding of the course contents, helped them get prepared in time, saved time in questioning and more session time was based on discussion, those who missed the lectures were able to capture it through video lectures, revisions were made easy and since it was also enabled to play on cell phones, students were able to use them without Computers and laptops. Hence it was indeed much appreciated to be introduced as part of the whole system.

DISCUSSION

The first finding associated with the objective 01 of the research exploration was that the existing online system had hurdles integrating the video lectures prepared by the researcher, hence alternate means were adopted to ensure they are available to the students and students could have easy access to them through alternate mediums as well. It must be considered with reference to the availability of the file size with ample space and bandwidth in the system if video lectures have to become part of the overall online educational system at AIOU.

With respect to the second objective of the study, students appreciated the researcher efforts to develop these lectures as part of the research yet were more fruitful for them to develop better understanding and helping them to watch these video offline and go through these multiple times as per their ease to develop better understanding and improve their learning experience. Respondents preferred it to be an integrated as an add-on or supplement to help students be able to cope with the online learning system.

With focus on the third objective of the research, as per discussion with the respondents, Video lectures were not considered as an alternate to online lecture sessions where two way interaction of face to face online interaction between students and teachers was made available. It should be made compulsory that these lectures were made available prior in time to help them better grasp the idea about the subject or unit contents and further discussion and clarity could be achieved through online discussion lecture sessions. Video lectures could be highly effective for those students who were having internet or connectivity issues and were unable to communicate well with teachers due to technical or geographic location issues. With reference to the multiple publications explored in the context of the study, it was concluded that video lectures as per mentioned by (Brame, 2016) and (Liu et al., 2020) have been a reliable and effective aid based source for online educational tasks related to design domain students.

RECOMMENDATIONS

Online portal must be enhanced/upgraded to support integration of video lectures in it. These should be integrated with the overall existing system and inline with the subject contents of the courses taught. Provide proper training to the teachers for developing these lectures and online content. Technical support must be provided to help teachers with managing this allied task. Developed lectures should be evaluated for quality checking and later be made available to the viewers.

The action research taken had multiple constraints including time limitation and physical accessibility to the respondents with focus on a specified targeted audience of master level degree. It must also be explored at higher as well as lower levels in the academia where synchronous lecture sessions were adopted as medium of educational instruction and teaching. Future researchers may also keep in mind that online questionnaires have limitations and respondents must be given prior orientation about data collection and purpose of the research. Respondents must be able to access them. All across the action research, future researchers must opt for an agile approach where the communication frequency and level must be increased

and alternate identification of choices and means must be done on urgent basis to follow the defined timeline and ensure deadlines are met.

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