

Development educational online lectures video vision and image on zoom, wechat and voov software in excess of named data networking during the COVID-19

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Abstract

The purpose of this article is to provide an overview, how educational online video lectures can take advantage of the Information-centric networking (ICN) model. The level of ICN simulation automation and the significant uptake of multimedia applications (zoom, wechat, and voov) that provide online video lectures are in more educational video lectures than NDN: better performance, better scalability, and better information demand strength in the challenges of communication. Are that students favorite high frequency, online video classes, during the COVID-19 semester, then their instructors are showing in the classroom (face-to-face teaching), while the Zoom application online video frequency is significantly higher than the other application (wechat and voov).

Keywords: Education; Information-centric networking; Named data networking; online video lectures; Update application.

1. Introduction

The association for educational communication and technology defines educational technology as "the learning and ethical process of improving performance and improving presentation by creating, using and running suitable technological processes and resources." An online lecture is an instructive lecture planned to live posted online. The lectures are recorded in audio, video or both, then uploaded and viewed on a nominated site. The students can leave to a specific location at any time to watch a specific online lecture that is convenient for them. Conventionally, oral learning is possible only when teachers and students are together in the same room, where teachers pass information on the same sides of the student. With the advent of video communication, online lectures are now possible. The development of online lectures makes it possible for teachers and students have not to stay in the same place to school and teach, respectively (Cascaval et al., 2008).

There are some benefits to lecturing online. As long as they have access to the internet, students can access online lectures published on their

mobile websites everywhere in the world. They can also be constant to take notes. Studies show that students significantly improve the curriculum of online archive lectures, particularly for global students. Study has also shown that the whole knowledge of a course has enhanced with adding of online lectures. There are dis-advantages to online lecture, specifically the lack of face-to-face communication, and the fact that students cannot simply communicate with teachers until communication has become a link. In addition, arcade lectures can reduce attendance at class lectures. This can be avoided by postponing the posting lecture in the class quiz or after the class lead (Scagnoli et al., 2019).

Educational technology (commonly called Edu-tech or Ed-tech) is the joint use of laptop hardware, software, and educational hypothesis and carry out to make easy learning. The Ed-tech creates, uses, and manages technical processes and instructive property to improve the user's educational presentation. In addition to hands-on experience, Ed-tech based on academic knowledge of different fields such as artificial intelligence, computer science, education, communication, psychology, and sociology (Hung & Chen, 2018). It covers a number of domains, as well as computer-based training, education theory, online learning, and M-learning, anywhere mobile technology are used. As

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a result, educational librarians are required aspiring educators have a variety of skills supply and professionals access to online video lectures using cell phone information and communication devices.

1.2 The aim of the study

This study analyzes the plan of educational online video lectures that succeed the above eight factors by exploit in sequence (Figure 1) Screenshot of the online video lectures.net on zoom, wechat and voov software release information and centric network (ICN) model. It present detailed NDN structural design for educational online video lectures spending, and discusses different performance problems and focus groups with students from diverse disciplines.

The rest of this study is prearranged as follows Segment. Segment 1 online video lectures survey in the current class room, student perceptions and preferences. Segment 2 briefly information of the ICN network example and the content centric networking (CCN) forwarding model on zoom, wechat and voov software. Segment 3 presents a probable NDN structural design for educational online video lectures utilization and its achievement issues. In conclusion, Segment 4 concludes the paper.

2. Review and literature

The utilize of educational online video lectures have strengthened this program in a range of teaching areas based on knowledge, such as human structure and functioning (Allen & Taylor, 2017). According to the Scagnoli et al. (2019) resulted that the student used appropriate video lectures perform alongside students attending traditional lectures and also can add video lectures as a sense of appointment with satisfied due to learner control presence of medium and instructor with video recording software, such as zoom, wechat, voov, chemtasia studio etc, video lectures are simple to arrange and can facilitate you to develop highly successful online information literacy courses.

According to Zhang et al. (2008) introduced a different automatic ending systems (I-Cam-2) that capture, broadcast, view, archive and search for lectures. The I-Cam-2 synchronization captures all content of the speech, as well as audio and video. According to Odhabi & Nicks-McCaleb (2011) found that to utilize of a fixed video camera and special glasses microphone for recording class-room tricks the point of examination for both the teaching assistant and scholar. Their purpose I wanted to get rid of require for enthusiastic video recording

classroom. They reviewed different technique used to record a highlighted the video lecture, and its reward and dis-advantages, each one and they follow the different kind of instructors exercises used throughout video lectures. He also found the number one student incidence, video type, video source, video length and current vs. favorite video addition methods. The from different kind of instructors another approach, examining the effect level of self-discipline (SD) and level of knowledge used as a focal point for watching and completing video lectures a source of learning in an online learning background (Hughes et al., 2018; Alpert & Hodkinson, 2019). There were three main results.

1. There is a productive relationship among both professor and SD viewing and finishing lectures;
2. Harmful association among SD and feedback current knowledge load.
3. Students in various demographic groups saw fewer lecture, tested and reported high academic load The lower level of SD.

In universal, video lectures can include different features such as: writer, organization, title, period, publication dates, and lecture feature for verbal communication, recording, digit of views reputation and so on. It can contain one or more parts. Each one there are also slides associated with time. A lecture belongs to categories such as Astronomy, Arts, Architecture, Business, Biology, Computer science, Medicine, Mathematics, Physics, Social sciences, etc, while categories can be there are a quantity of subcategories (Grcar et al., 2009; Hughes et al., 2018).

Title 1: "Welfare inflation and poverty in the UK (1900-2020)."

Author: Prof. Pat Thain, Academician of the British Academy of Humanities and Social Sciences.

Title 2: "Norman conquest and its settlement in England"

Author: Prof. Bills, Edinburgh University.

Categories: Welfare inflation and poverty in the UK (1900-2020) and "Norman conquest and its settlement in England"—Information

Retrieval: Zoom, Wechat and VooV with Multimedia Retrieval.

Published: Nov. 12-13- 2020, Recorded: Nov 12-13-2020

Views: 925 teachers and student from the London University, Nanjing University, Fudan University and Sun Yetsen University.

Parts: Part 1 (1:01:39), Part 2(1: 30: 20).

Discussion: for short discussion they show some slides.

In online video lecture portal, user can find video lectures a keyword, title, content type (such

as tutorial, key text), verbal communication, year and viewing order like hot, popular, just available, current and top voted alternatively, user can explore for online video lecture using the writer name have great biographer available lecture with

a huge number of ideas. The user can also look at online video lectures and mark their own assessment or comment, but there is a specific observation policy.



Figure 1. Shown a screen-shot of the online video lectures, on Zoom, Wechat and VooV internet software for online video lecture.

2.1. Weaknesses in modern internet structural design for online video lecture support

The current internet structural design adopts host-centric pattern based on constant contact and back-to-back the last standard. This is a "client-server" design to face challenge in at the bottom of safe content-based functionality. In this information dissemination design, the system "Transparent" and only forwarding data (i.e it is "content creation"). Being uninformed of this, the equivalent information is resent among end-points on the network and another time without optimizing network traffic part about video lectures, current internet architecture (Piro et al., 2014). The eight challenges cannot be met effectively.

1. **Location-dependence issue:** The problem of dependence on location is an obstacle in the identification of knowledge online video lectures with simply their names and / or not further than their locations (for example IP address).
2. **Availability issue:** The matter of availability shows that there is a need to bring online video lectures quickly, reliably and efficiently. In common, satisfied users care about how fast and reliable it is the requested content can be accessed.
3. **Safety issue:** Virtual learners are frequently exposed to the flaw of the internet. They are focus to unsuitable websites and advertisements, online predators and hackers. Their privacy is also at stake. Also, different element and mortar schools, students are not under the constant supervision of teachers.
4. **Lack of communication:** Online learners lose face-to-face communication. This hinders communication skills for the reason that they do not converse with researcher students and teachers on a daily basis. The lack personal guidance from teachers as well as classroom conversations.
5. **Lack of Motivation:** Online learners need to be self-disciplined to succeed. The student who has problem managing delays and occasion will have difficulty carrying out their work and avoiding distraction. The fundamental schools also lack the infrastructure establish in traditional schools.
6. **Unpreparedness:** The students register in fundamental schools are not organized face challenge cooperative life. The frequently require community, and educational skills to be successful at the next stage. Many people have difficulty adapting to the routine and structure

of mortar and brick schools. They also have difficulty adapt document, pencil tests and homework.

7. **Scalability issue:** This is connected to handling a very large one quantity of user. In this folder, there have got to be different difficulties solution. These issues are connected to imperfect storage space, bandwidth and computational capability change facility worker.
8. The problem of fault tolerance meets the need to enhance it respectfully, the flexibility of the online video lecture stream service system breakdown.

3. Material and methods

The students relatively than teachers were selected designed for this investigation because every student sits in a number of different instructor lectures, and thus is a better place to information on a huge number of lessons and teacher techniques. This selection can be used to assess student's awareness and preference. An online investigation of students was carry out asking them how various videos they were watching in their classes teach, and what their preference was for those videos. The inquiry words was planned to be straightforward, direct and understandable to gain consistent and suitable procedures as per Krosnick (2018).

We predict that a large model will be required to signify current methods, and students' ideas. This model was provided by a profitable market investigate company (Survey Manki). The comprehensive collection of the selected sample to make sure its quality is the next detailed one, as its value and the character of the procedures are vital. We consider that the concluding sample and analysis component provides exact, unique and sophisticated datasets.

3.1 Preferred sample and sample selection procedure

It was vital to get a sample with a high percentage of students who watched the video to complete more detailed sections on video usage. Consequently, the following screening questions were asked: Question. 1) Are you presently a registered university student? Question. 2) Do you be present at any lectures at institution of higher education? And Question. 3) Have any videos been shown in a lecture class that you attended this semester? Questions 1 and 2 made sure that currently only admitted university students were involved in direct lecture classes. This has led to university students who may not be attending

online lectures directly, and others who have been studying online or have experienced a classroom situation. Question 3 shows students who attended online lecture classes who did not show the video. To be part of the final sample, potential respondents had to answer "yes" to all three screening questions. The question mark was run in March to June 2020, usually towards the end of the semester.

3.2 Statistical analysis

The data were analyzed using the GLM procedure (SPSS, version 12.0). Means of the significantly affected traits were separated by Duncan Multiple Range Test. We have used the scale of percentage (%) as statistically significant.

4. Results and Discussion

4.1 Segment 1 online video lectures survey in the current class room, student perceptions and preferences.

The survey measured four academic characteristics: discipline, university type, university focus, and degree type. The number of respondents in the most important university departments of Arts and Humanities, Business, Economics, and Social Sciences was the same, with a lower number of other subjects regarding the teachers and students. Investigation Monkey provided a sample of 900 possible respondents in the Nanjing university conferences room. Of these, 59% were presently enrolled in university students (Q1) at the time, 50% studied in lecture class (Q2), and 46% watched a online video in lecture classes throughout the COVID-19 semester (Q3). That is,

when all three screening questions were answered "yes" in 886 of 900, Attention was excluded for weakness to answer the inquiry properly, and additional 14 peoples were excluded for not answering sufficient questions. (Select "Agree strongly if you live in the China."). This rigorous sampling process produced 886 high-quality responses.

We currently in attendance discoveries regarding the present perform in video use in lectures, beginning with formative the frequency of videos exposed in online lecture course of the original 886 possible respondents contacted by investigation Monkey, 900 registered the university and enrolled in a online lecture lessons (yes, both Q1 and Q2). Of the 900 students, 86% reported that a video was shown in an online lecture group of students that they be present at in COVID-19 semester (yes Q3). So, overall, for the inquiry of what percentage (%) of university students are registered in lecture lessons, they watch at least one video throughout a COVID-19 semester, the result of our survey is 86%. The results of the rest of the survey, which illustrate modern video use in lecture program, refer to the full-screen sample of 773 respondents (as described above) and are information in the weekly unit lecture course of analysis.

Table 1 shows that, in 14 courses, 10% showed zero (none) videos, 19% showed only one, 12% showed 2 videos, 10% showed three (3), And 12% showed four or more. Consequently, 70% of the courses (14 totals in courses) included at least one video. These results show that videos are being shown in the majority of the lecture classes in any months in advanced schooling today.

Table 1. Frequency of the online videos lecture classes during the COVID-19 semester

Class\# Videos	None	1 Month	2 Month	3 Month	4Month
Class 1	73	101	261	68	100
Class 2	81	69	202	85	70
Class 3	60	80	145	50	80
Class 4	37	60	119	47	60
Avg	62.5	77.5	181.75	62.5	77.5
%	10%	12%	29%	10%	12%

n=2517 classes n=900 students and teacher

Currently that the total frequency of online videos in the lecture classes is known, let us eliminate it by the online video source shown (Table 2 and Figure 4). The use of Instructor-created and / or featured online videos has never been measured before. Our research has shown that about the Zoom, Wechat and VooV internet online videos frequency. Is that students preferred a high frequency of online videos classes during the

COVID-19 semester, than their instructors are showing in class room (face-to face teaching), while the Zoom application online video frequency is significantly higher the other application. The study establishes evidence that students reported that they included short, exclusive videos in the live lecture class created by the instructor specifically for their class (Alpert, 2016).

Table 2. Comparison of online videos lecture and Face-to-Face teaching performance during the COIVD-19 semester

No of months	No of Students	No of Classes	Videos application	Face-to-Face teaching performance %	online videos lecture performance %
1	900	18	YouTube	34b	66b
2	900	18	Zoom	45b	99a
3	900	18	VooV	69b	79a
4	900	18	Wechat	89b	96a

According to Summers *et al.*, (2005) the students registered in the online course were significantly less satisfied compared to traditional classroom students in many ways.

The study establishes evidence that the consequences show that young adults agree and accept that an eco-friendly lifestyle is an important goal. Even though he gets background information from social media (online information), they rarely share or interact with social media posts. This performance means that he there are recipients of information when dealing with such satisfied (Chung *et al.*, 2020). However, organized to analyze student success assignments for the two parts of the graduate course in human development and education, Teach three parts of the scholar, both online and face-to-face educational psychology, two of which were teaches face-to-face, and one was teaches online. The results show that there was no significant difference among the works presented online segment students and face-to-face students. What else guidance methods are more significant than liberation platforms (Dell *et*

al., 2010).

4.2 Segment 2: The briefly information of the ICN networking example and the content centric networking (CCN) promoting model on zoom, wechat and voov software.

The ICN model refers to the internet of the future exchange of information to address the above challenges. In commonly, ICN is a newer solution based on traditional IP network problems (Figure 2) (Jacobson *et al.*, 2009; Xylomenos *et al.*, 2014). At ICN, network architecture is central Not "unknown information" (or data or content) and "end host". ICN developed the internet communications in a straight line support access to named-order data objects (NDOs) network system. In ICN, contacts may be alternating, at the same time as mobility and various accesses are common. Other than that, multicast and transmits are maintain. The most recent but at the very least, the data becomes autonomous of position, sources of relevance, storage and transportation. This ICN produces network caching and duplication in real estate (Figure 2).

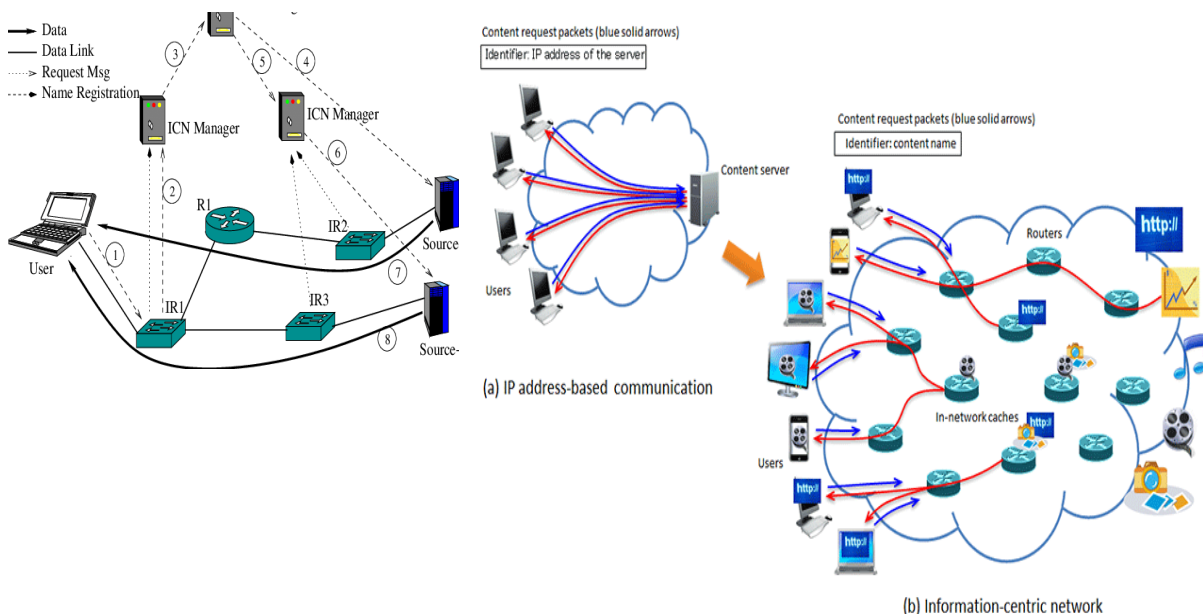


Figure 2. Recent Information-Centric Networking Approach. <https://www.nict.go.jp/en/info/topics/2014/12/141217-1.html>

Is emerging as one of the most vigorous study areas for ICN used various sectors such as online social network applications (zoom, wechat and voov software/ applications), agriculture, and building management systems (Phupattanasin & Tong, 2014). For that reason the population has enhanced in an urban surroundings area, a well-dressed town is a demanding sight which solves safe and secure applications everywhere in a lot of peoples domain (e.g. municipal organization, E-government and intelligent transport system, community security, health-care, construction and town development, smart measurement) (Amadeo et al., 2016).

The estimated better performance of the ICN architectures are: enhanced scalability for information/bandwidth demand and improved strength in difficult communication (Vasilakos et al., 2015). The NDN is one in architecture a model of

easy, robust and efficient announcement initially, the CCN proposal was supported. The main arguments of NDN provide the hosted on <https://name-data.net/> that has changed basic use of the present internet delivery of packets to a content-based model from end to end. The NDN supports balanced announcement that is not necessary simultaneous attendance of clients and suppliers, and therefore, it may operate under alternating contact situation. The main argument NDN model has some advantages for example: (1) Easy arrangement of network devices. (2) Satisfies caching that decreased blockage, and enhanced speed supply, and (3). Configure network security at the data level. On the other hand, the key benefits of NDN are effective access and content distribution. Finally, NDN communications the key components of the model are described CCN (Figure 3).

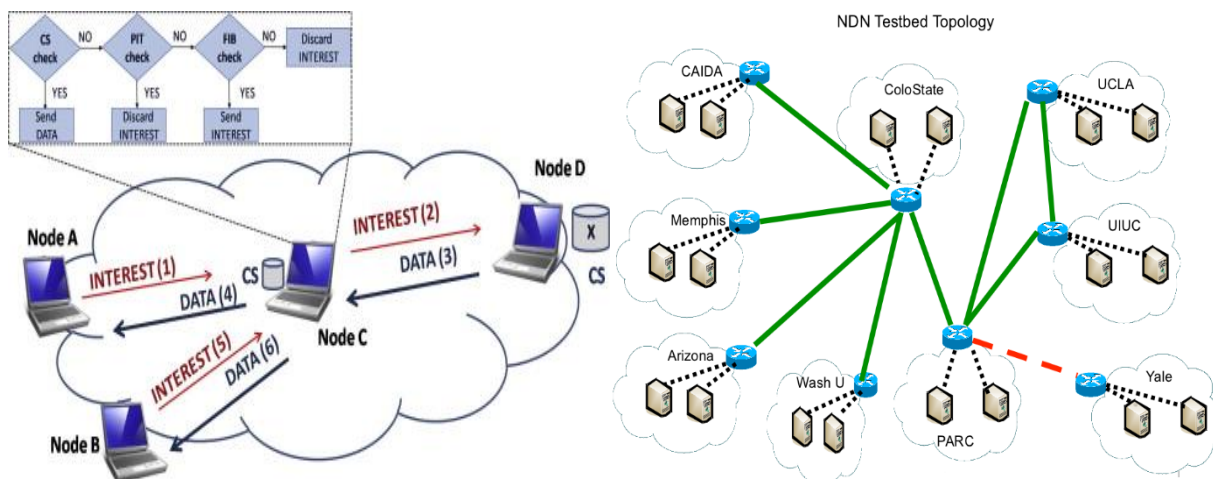


Figure 3. Content-centric and named data networking approach. <https://www.nict.go.jp/en/info/topics/2014/12/141217-1.html>

4.3 Segment 3: Present a probable NDN structural design for educational online video lectures utilization and its achievement issues.

In this segment, we describe and examine NDN technology conditions use for educational online video lectures. We demonstrate, how can educational online video lectures be free of site, relevance, storage and resources of transportation, provide affordable and everywhere system caching and downloading. In our NDN structural design for educational online videos lectures, E-learners will create and prepare data users applications for educational online video lectures. For example, puts the professor surname lecture/001@Prof.WilliamYu or lecture/002@Prof.PatThain or lecture/003@Prof.BillsEdinburghUniversity, sends

in the significance small package and send it to network. The surname lecture/003@Prof.BillsEdinburghUniversity recognize the video lecture numbers 003 that has be available by the portable apparatus of the user person's name "Prof. Bills." (Figure 4).

(a) Name declaration and direction-finding

The name freedom is planned to enable publishers identify each part of the video lecture. These plans agree to users, to easily establish specific position in the video lecture. The designed provide the exact surname of the comfortable information regarding a special educational video lecture programming algorithm (used) and series number related to the given part.

(b) Lecture Title or Video lectures

For example, substance name: / Welfare inflation and poverty in the UK (1900-2020)." Video lecture / MP3 or 4 can characterize a seventh part of video lecture entitled: "Welfare inflation and poverty in the UK (1900-2020)." "Which are fixed according to him MP3 algorithm, therefore to

supply a random video lecture, throughout the call process, the users be capable of contents, inside the surname, and time code, For example, the 1H: 10M: 55S frames used to select the server highly suitable information packets in online video lectures.

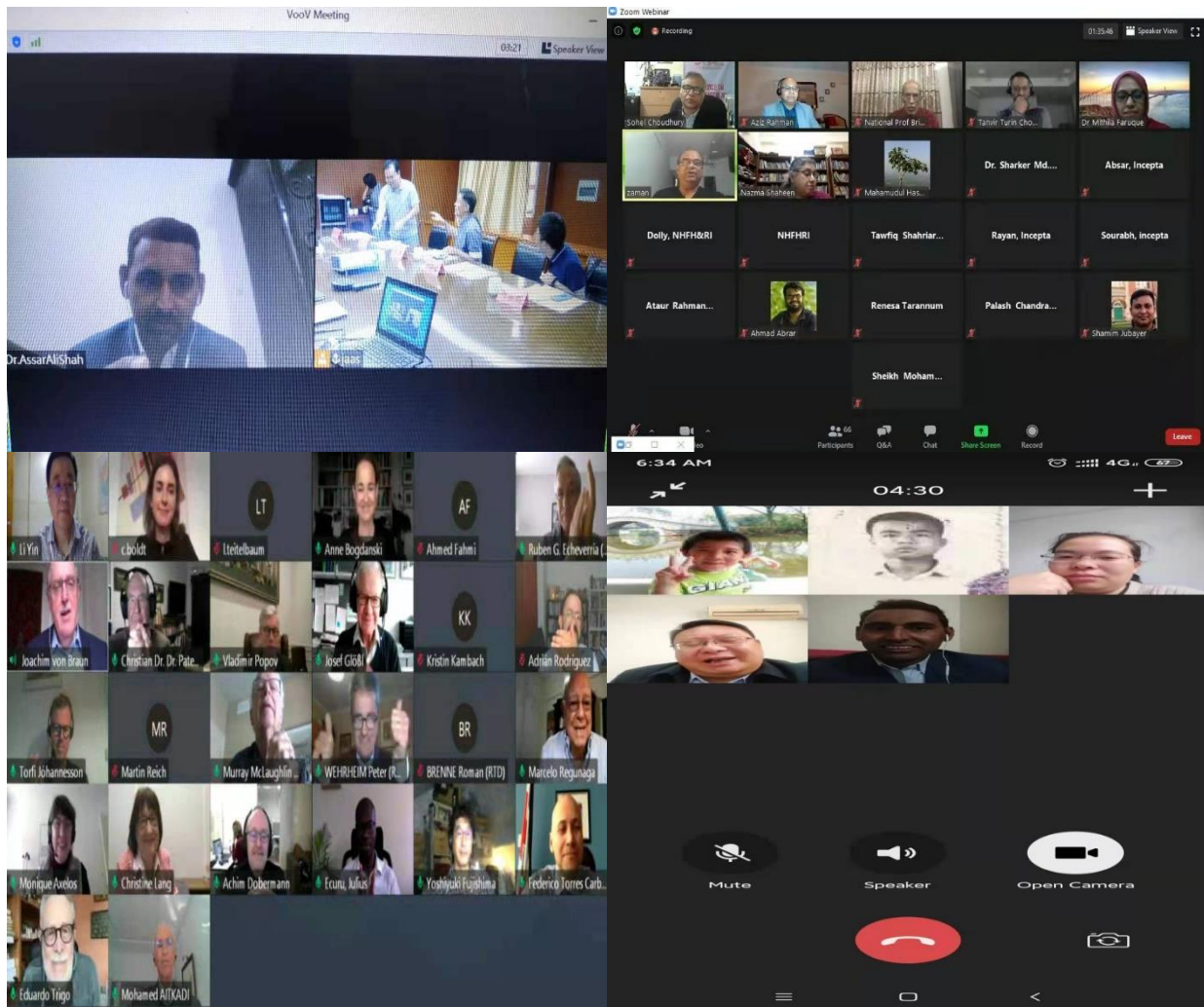


Figure 4. Shows a screenshot of the online video lectures, on Zoom, and Wechat internet software for the previous online video lecture.

(c) Caching online video lectures

The content caching is not a must authentic time video services, since cached content may end earlier asking a second time. Conversely, the plan of a highly developed caching approach has significantly enhanced the presentation of on-demand online video lectures. The merits display place caching strategy is very talented and has been adopted into our structure. The NDN currently has no real-time service caching policy associated with traditional data packets (TOS) instead of displaying features (Lee et al., 2011).

The online education background has shown that students' positive emotions outweigh their negative emotions in various online learning activities, especially during interaction activities with the tutor and peers. They also establish that experiencing positive emotions while preparing for exams is strongly linked to students' learning process and student motivations that support knowledge outcomes. Some studies have been done in control value theory (CVT) based on technology rich background. For example, virtual tuition systems (VTS) and self-paced online courses

analyzed students' emotions. In particular, Marchand & Gutierrez (2012) found that the importance of student efficacy significantly predicts aggravation in equally online and on-campus courses. An experimental study in a VTS has shown that limiting student control in a technology-rich background leads to advanced levels of negative student emotions (Lehman et al., 2012). Students' attitudes are largely associated to domains. While feelings of success were analyzed in various content domains (such as school subjects, math, research in teacher schooling is largely absent. There are a number of studies on the specific math disorder of students' emotions, especially the lack of explore on students' emotions in the "school education" teacher education domain (Jackson, 2015; Yuan & Lee, 2016; Bieg et al., 2017).

Additionally, a domain represents a common outline or configuration and can be interpreted as an education background. It can be assumed that the online education background differs from the conventional, face-to-face teaching concerning students' emotions (control and value assessment), inspiration and knowledge outcomes. Unlike on-campus courses, students look only for individual online learning environments in terms of their arrangement and facial appearance. In terms of CVT, this means that students' acquisition of emotions can be related not only to themselves but also to the digital knowledge background. There are not only major differences among the students participating in the online campus course and the students studying in the online course, but also the perceptions of the control value of the students studying in the online course and their content. They are also different in terms of technology (Butz et al., 2015).

Conclusion

It is conclude that the students preferred a high frequency of online videos classes during the COIVD-19 semester, than their instructors are showing in class room (face-to face teaching), while the Zoom application online video frequency is significantly higher the other application.

The content-based systems, for example video sharing and streaming, public media and internet procedure TV (IPTV) contain become fashionable and their implementation within the Internet is prominent. While, in the present internet structural design, a material that contains online video lectures retrieved from its storeroom location (IP address).

The ICN pattern is novel models that address IP networks limitations in content allocation and

information support duplicate and providing content from host's capability to recover content by its identifier (name). This article suggests an educational video framework lectures that exploit the ICN parable. Specifically, it is projected a specific NDN structural design framework for education consumption of video lectures and also discuss variously implementation matters. And also, it exists ICN structural design that chains video services.

Implication

We came to the conclusion that our educational video lectures about NDN architecture, there will be a framework. (a) Better performance (b) Improved scalability for information / bandwidth demand (c) Better resilience to demand announcement scenarios for online video lectures. Which routing system (Flood or DHT) will apply online video lectures to our framework for forwarding data: (1) The range of the network in which educational video lectures will be delivered (2) Material space dynamics; And (3) Reputation of archived video lecture.

To diagnose and develop the procedure of information discovery and delivery (educational online video lecture on Zoom, Wechat and VooV frequency improve with NDN), we should utilize a standard assessment model that understands software and educational principles perspective. For our framework, applicant and exceptional a sample of quality evaluation is accessible, as it takes into description the important application perspectives for example, presentation, application usability, accessibility, user crossing point, ease of access, dependability, safety, and constancy.

Declaration

Availability of data and materials

All the data relevant to the research are available in the paper.

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