

# A Survey: Readiness of Bengal in Adopting Blended Learning

\*Pratyusha Sarkar, \*\*Dr. Indrani Nath, \*\*\*Prof. Kutubuddin Halder

<sup>1</sup>Senior Research Fellow, <sup>2</sup>Associate Professor, <sup>3</sup>Professor

**Abstract:** Technology brought immense change in the field of education, one of its innovations is blended learning where two modes (Online and offline) of instruction is mixed to make the learning process more effective and accessible. This research aimed to investigate the readiness students to adopt blended learning mode as the formal mode of learning and also the study will illuminate present infrastructural condition of the educational institutions West Bengal. Researcher employed descriptive survey technique to collect data and a structured questionnaire was developed by the researcher. 120 undergraduate students studying in different University of Calcutta affiliated colleges from rural and urban areas were considered as samples and the data were collected through the questionnaire. For qualitative analysis a semi-structured interview was conducted. The result revealed that 100% undergraduate students' usages smartphones and internet and they often take help of internet to solve their educational need and mostly the urban students have needed technological skills to adopt blended learning. But the colleges infrastructural condition and the attitude of administrator in some extent need to renovate.

**Keywords:** Blended Learning, Readiness, Undergraduate Students, infrastructural conditions.

**Introduction:** Technology has made our life so easy and has given us so many facilities which, we could never have imagined before. At the same time technology has not only improved the standard of living of human beings but has brought revolutionary changes in the field of development of the country and the world. Technology affects almost every aspect of 21<sup>st</sup> century life, from transport efficiency access to food healthcare, socialization and productivity, education and access of worldwide information. Primarily education was limited within the four walls of the educational institution and individuals had to travel to the centres to avail the education. But technological innovation and specially the access of internet brings the massive amount of information (E-Books, audio, video, images) at one's fingertips. The opportunity of formal learning is available online worldwide through the MOOCs, podcasts, online degree programmes and more. The educational opportunity and the access of education has been broadened with the help of technology.

This technological revolution brought a new concept in the field of education is Blended Learning. The Blended Learning concept was developed by Cooney et. al. in 2000 and it became popular in last two decades. In the proceeding of Educational in a Changing Environment Conference of Salford University, Procter, C. (2003) defined blended learning as "Blended learning is the effective combination of different modes of delivery, models of delivery, models of teaching and styles of learning" [1]. Bonk, J.C. and Graham, C. R. in 2004 gave most three common definitions of blended learning: "a) A combination of instructional modalities (or delivery media), b) A combination of instructional methods, c) A combination of online and face-to-face instruction" [2] In the beginning the concept was blended learning was to just mix or blend of two modes of instructional method but with the passage of time the concept of blended learning has undergone changes specially after the technological innovation. At present the blended learning refer to the blend of online and offline or face-to-face traditional learning. In the COVID-19 pandemic situation this mode of instruction immensely helped the country to continue the educational programmes. The blended learning concept also sheds light on another aspect which is inclusive and quality education with equal opportunity. United Nations Goal 4 (SEGD4) to provide inclusive and equitable quality education and promote lifelong learning opportunities to all by 2030 was adopted by India 2015. The National Policy of Education 2020 (pp-58) recommended that "the existing digital platforms and ongoing ICT-based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education for all" [3]. The policy also identified various aspect of teaching learning which need to be develop and suitable training for teachers will also be given for conducting teaching learning effectively through online mode. For the implementation of blended learning all over the country a suitable condition is required for running the process flawlessly. Many obstacles are already there in the system these are the poor infrastructural conditions of the higher educational institutions, poor attitudes of teachers towards accepting the change, technological skills of learner and the teachers, poor method of teaching etc. Before making provision the readiness of the institution and students needs to be measured. This research is an attempt to measure the two aspect of readiness that will give the authority a clear vision about the real condition institutions and the students readiness to adopt blended learning.

## **Review of related literature:**

Adams, D. et al. (2020) conducted a study in a leading Malaysian private higher education institution to investigate students' readiness for blended learning. They collected 274 pre-university students by using the blended learning readiness engagement questionnaire and result revealed that students were ready for blended learning. Further analysis indicated there were differences in students' readiness for blended learning based on gender, age, ethnicity and the field of study [4].

Kumari, K.W.S.N. and Jayasinghe, G.J.M.S.R (2021) conducted research in Sri Lanka to investigate the readiness of undergraduates for blended learning and they structured a questionnaire and surveyed online on 549 students representing all the universities of Sri Lanka applied convenience sampling method and resulted 50% students are moderately ready and the factor effecting are technological skills, study habit, communication system, availability of the resources and belief or attitude and method [5].

Hamzah, F. et. al. (2020), aimed at investigating the students' readiness on English language blended learning in Malaysia. 137 students of different courses from a public university in Melaka participated in the study and answered a questionnaire. The result

indicted that they enjoy learning English in a traditional classroom since face-to-face communication with their instructors allows them to remember better as well as enables them to gain more in-depth understanding of a lesson [6].

Bhaumik, R. and A, Priyadashini. (2020) studied e-readiness of senior secondary school learners for transition to online learning along with their views on this mode of learning transaction in India. Quantitative descriptive survey method was used and 100 students were taken as sample and they revealed 35.2% learner found online classes as effective as face-to-face classes. The delivery of online learning by teachers and digital skills of learners were found lacking. The geographical scope of the study is limited to National Capital Region of Delhi which has better smartphone penetration and internet access as compared to other states in India [7].

Swaminathan, N. et.al. (2022) studied to identify the entry-level health profession students' perception and readiness to adopt online learning as a component of blended learning in India. They employed the method of cross sectional survey using a structured questionnaire and 603 data were collected. Resulted as Most of the participants were comfortable in accessing online learning materials and interacting with peers. The majority of the participants (77.4%) were willing to spend 10 to 20 hours per week on online learning [8].

Pandya, D. and N. Sharoff, (2022), conducted survey type research employing a questionnaire to examine how the attitude of students towards different learning aspects could influence their readiness for blended learning. 244 data were collected and analysed the data by using qualitative and quantitative technique. The results demonstrate a significant relationship between students' attitude towards classroom learning, learning flexibility, online interaction and their readiness for blended learning [9].

Lot of researches have been conducted after the pandemic of COVIN-19 but the importance of blended learning has been multiplied since the recommendation of NEP 2020. The policy recommended all the HEI's to adopt blended learning as the medium of instruction to provide inclusive and quality education. A lot of research was conducted to examine the effectiveness of blended learning and resulted highly positive outcome in students' achievement. But for implementing blended learning an effective plan, suitable infrastructural facilities of higher educational institutions, a positive attitude of the stake holders, effective teaching models and technological skills are required. Thus, in this research researcher attempts to analyse the overall student's readiness and the suitable infrastructural facilities available in the colleges of West Bengal. No such research is found which addressed these issues earlier so the researcher felt an urgency to enlighten the field of education.

#### Research questions:

1. Are undergraduate students of Bengal ready to adopt Blended Learning as a regular teaching learning mode of instruction?
2. How ready are the colleges of Bengal in providing teaching learning through the Blended Mode of instruction?
3. Do the colleges have suitable infrastructural facilities to run Blended Learning as regular instructional process?

#### Objectives of the study:

1. To understand the readiness of undergraduate students of Bengal in adopting Blended Learning as regular mode of learning.
2. To Understand the readiness of colleges of West Bengal in adopting Blended Learning in providing education in regular teaching learning programme.
3. To find out the infrastructural conditions of the colleges to run Blended Learning as regular instructional process.

**Delimitation:** The research is delimited in the University of Calcutta affiliated colleges and undergraduate level of education.

#### Limitation:

1. Small number of respondents were taken as sample keeping time and cost in the mind, so the result may vary in separate set of samples and the generalizations may not be 100% accurate for the whole urban and rural population of West Bengal in finding out the reediness of students in adopting Blended Learning.
2. The infrastructural facilities may vary college to college, in this research researcher took only six colleges, so the infrastructural conditions can not be generalised for all the colleges of West Bengal.

**Methodology:** To conduct the study researcher employed both the qualitative and quantitative technique. In the beginning of the study researcher conducted a survey and then interviewed few of them for qualitative analysis of the data.

**Tools and Techniques:** To conduct the survey a self-made questionnaire was developed by the researcher. In the later stage of the study a qualitative analysis was done on the basis of the questionnaire and interpreted the data on the basis of the samples feedback. The tool consists 30 items and validated by using Delphi techniques (5 subject experts).

**Sample and Sampling technique:** Six colleges of Bengal affiliated to University of Calcutta were taken as the sample located in Rural and Urban areas of the span area of the University. 120 undergraduate students are taken as the sample 20 students from each college and to understand the infrastructural facilities of the college an interview was conducted with the administrator of the colleges (Principal and Principal in charge). Random sampling technique was adopted in selecting the colleges by employing lottery technique. Then convenience or incidental sampling was employed in selecting the sample.

**Devices Available to Students:** Technological devices plays an important role in accessing internet and online study material. So, the kind of devices available to the students need to be measured. Half of the total respondents are using mobile to access internet and 27.5% students have Mobile and PC (Desktop and Laptop) and 22.5% have all the needed devices from which they can access internet.

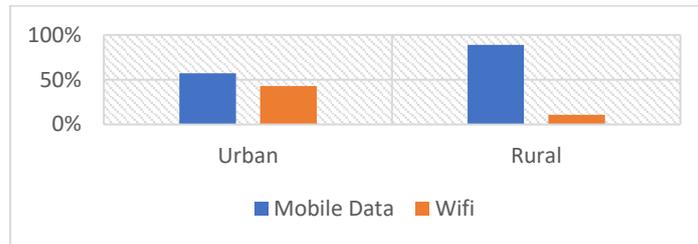
Table No.1

<i>Devices Available</i>	<i>Responses</i>	<i>Percentage</i>	<i>Rural</i>	<i>Urban</i>
Mobile	60	50%	41	19
Mobile/PC	33	27.5%	12	21
Mobile/PC/Tab/Others	27	22.5%	7	20
Total	120	100%	60	60

Most of students from urban colleges have needed equipment to access internet where the maximum number rural students have only the mobile phone in which they access internet to solve their educational other internet-based needs. The usage of Mobile Data

is typically popular than the Wi-Fi and the usage of Wi-Fi is popular in urban students because the Wi-Fi connectivity is not feasible to interior of the villages in their locality. In most of villages are in the range of mobile data connectivity but the data speed is really slow in these interior villages of Bengal. Another important barrier is the low socio-economic status many of the students expressed that mobile data are less expensive than Wi-Fi and they can not afford the expenses of the both.

Fig.1



**Purpose of Using Internet:** Internet is an important tool to meet these purposes of students like communication, entertainment, fulfil educational need, Knowledge development moreover it has given us the universal access of knowledge and information. To understand the purpose of student’s internet usages, researcher developed an item based of the preferable usage pattern of the students. The result revealed that majority of students (Approx. 37.50%) uses internet the solve the entertainment, educational, communication need and these are mainly urban population. 21.66% students use internet for the entertainment purposes mainly watches YouTube Video, Movies, Song etc and majority of them belongs to rural area (15.83%). Internet is used to meet solely educational (18.33%) and communication (22.50%) purpose.

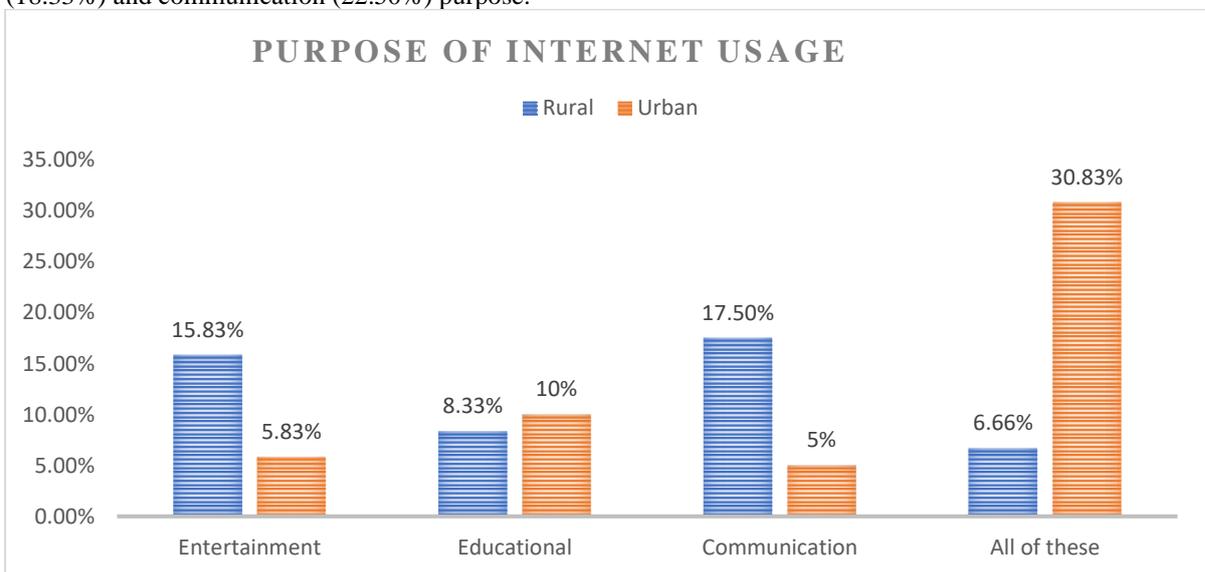


Fig.2

To solve the educational need the student usage search engine (Popularly Google) and download pdf and open educational resources. According them these sources of information are really helpful to meet their education related quarries. Also, they like to watch lectures on YouTube to clarify the doubt related to their lesson. Communicational need is mainly catered by the internet. Approximately 17.50% of the rural population uses internet mainly to communicate (Video call, Chats, WhatsApp etc).

**Readiness Of Colleges:** Readiness of colleges or institution are mainly depending on the attitude of the administrator, teacher and the infrastructural facilities available in the colleges. In this study researcher only focused on the infrastructural condition of the colleges were measured based on some parameter like smart classroom availability, usages nature of smart classroom, available internet facility in the college premises, computers in library, e-learning materials in the libraries, and the classroom recording facilities.

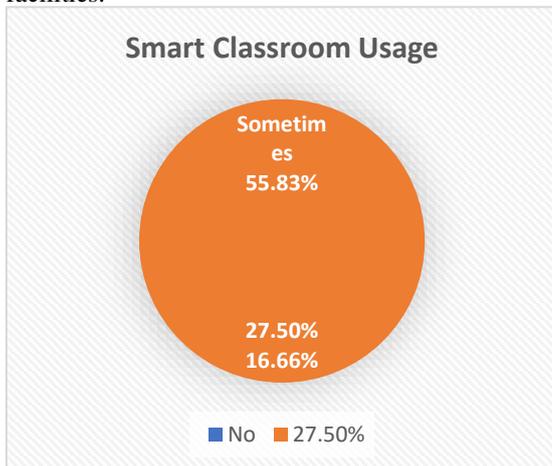


Fig.3 All the college premise are Wi-Fi enable irrespective of the locality but the internet facility is limited to administrative, office work and teachers use. This is highly secure internet connection and students will not enjoy the Wi-Fi facility. According to the administrator students will not use the internet for educational purpose and they will rather use the internet to access entertainment materials. All the colleges have the smart classroom facility but the but the frequency of usage is really less. Majority of the students (55.83%) responded that smart classroom is mainly used for the seminar or any special purpose and these classroom does not use for the regular teaching learning. But 27.5% students said that in their colleges smart classroom is used regularly in their teaching learning and they also said that the integration of technology with regular teaching learning process make the class more interesting and they can also understand the topic more easily. 16.66% said that they never entered into the smart classroom for once in their college life because no class had been conducted yet in the smart classroom. From the administrator side most of the colleges has only one smart classroom so it is

not possible to allot the smart classroom every department simultaneously, at a time only one class can be conducted in this classroom.

**Library and Digital Learning Material:** All colleges have computers in their libraries and student can access the computers and internet to access online teaching material, open access educational resources and open access journal to develop their knowledge. But some colleges have e-content also of their books which has free access and students can use and access these materials from their mobile phone. In this study, 46.66% respondents are said that partially their college library have e-learning material and 41.66% students' response are negative they said the college do not have the e-learning materials in their library. Rest of the student said yes in their college library have all the e-learning materials.

Fig.4

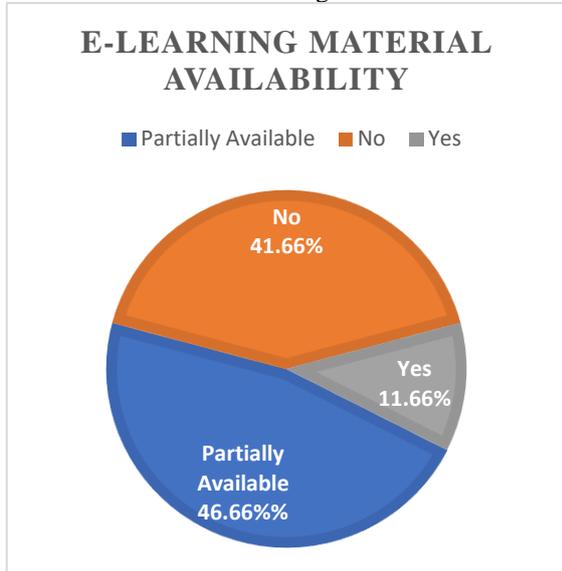
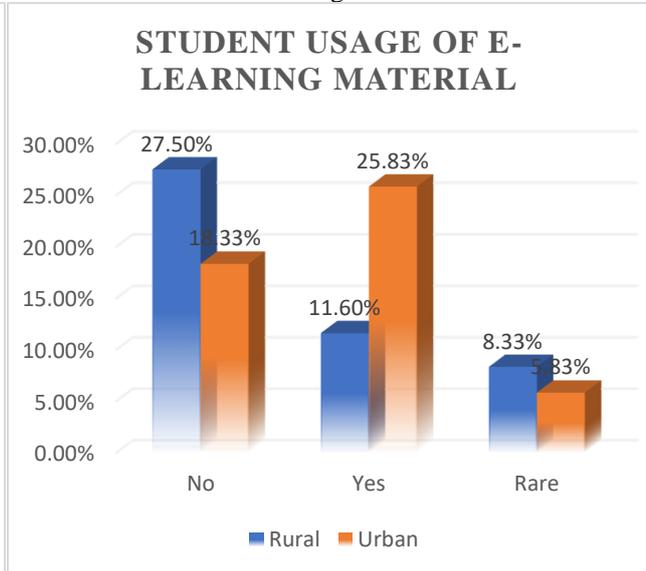


Fig.5



College may or may not have e-learning facility but 37.5% students of West Bengal specially students from urban areas uses digital library and e-learning material form their college library and NDL and from other open access e-learning sites. Most of the students are not aware about the e-learning material whether their college library have or have not and they responded for No. After the interview of the administrator researcher came to know that the colleges partially have e-learning material. According to the students most of the material which they have in their college library are useless and these materials have no such usage in their lesson because most of the materials are not properly visible and obsolete too.

**Classroom Recording Facilities:** Recording classroom teaching is another important feature of Blended Learning. Because this will give the student flexibility to learn at their own pace equally it will give freedom to the learner to clarify their doubts by listening the audio video material repeatedly after the classroom. Classroom recording facilities should be available in all the colleges to run blended learning mode of instruction effectively. But many of the colleges these facilities but not for all the classroom. So, all the teachers do not have the accessibility to record their lectures only some teacher will get the privileges who are teaching in those classrooms where recording facilities are available.

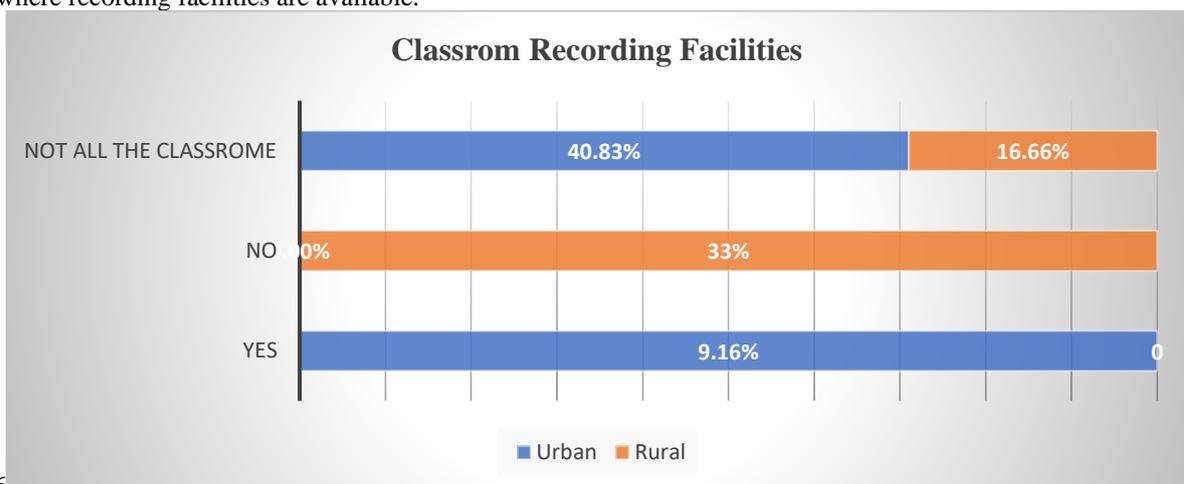


Fig.6

According the students' responses, all the classrooms do not have recording facilities and some of the rural colleges do not have the minimum number of classrooms which have recording facilities. 33.33% students are from rural areas responded as their colleges do not have the facilities to record the classroom lectures. 9.16% students from urban areas said their colleges have these facilities in all the classrooms but the recorded materials are not sent to the students. Administrators of those colleges have confirmed that they do have facilities to record the classroom but these recording are mainly used for the official purpose. But most of the colleges from rural areas have not the facilities not even in a single classroom.

**Finding of the study:**

- ✓ Maximum number of students uses smart phone to access internet and most the students from the rural areas only have a smartphone in which they can access internet.
- ✓ The usage of Mobile Data is typically popular than the Wi-Fi and the usage of Wi-Fi is popular in urban students.
- ✓ Students from urban areas are aware in using internet diversly where the rural students use internet mostly in communication and entertainment purpose.
- ✓ Smart classroom is available in every college of West Bengal affiliated to University of Calcutta.
- ✓ But the uses of these smart classroom are very less. Approx. 55.83% student responded that the smart classroom is used occasionally.
- ✓ The colleges have computers in Library and students can use those library computers.
- ✓ College campuses are Wi-Fi enabled but the Wi-Fi facility is not for the students use.
- ✓ Colleges partially have e-learning materials in their libraries but they student do not find them useful.
- ✓ Most of the students are not aware about the e-learning material whether their college library have or have not.
- ✓ The students from urban colleges are more likely to use e-learning material. Besides their college library they also have membership in NDL and other OER sites.
- ✓ Classroom recording facilities are available but not for the all classes. Maximum numbers of colleges from urban areas have the facility to record the lectures but they do not send these lectures to the students.
- ✓ Maximum number of rural colleges do not have the minimum facilities to record the classroom lectures not even in a single classroom also.
- ✓ Students are quite ready the adopt blended learning but a proper interactive method should be adopted.

**Conclusion:** Blended learning has positive impact in students' achievement at higher education. Many researchers work resulted that blended learning improves creativity, attention level and motivations in their regular teaching learning process. But the process of blended learning is quite dependent on the student's readiness or their willingness to learn because it gives the learner a great freedom to learn at their own pace. So, learner's sincerity and their interest in learning plays a great role in order to implement blended learning affectively. One of the important factors of blended learning is the technological skills and a positive attitude to learn from the universal open online platform. This research revealed that the undergraduate students of West Bengal are quite ready to adopt blended learning. They are moderately skilled in using technology. 100% students from Bengal uses smartphone and internet. Only they need assistance and awareness about the online educational resources. The research also revealed that they enjoy the technology equipped classes in the smart classroom but infrastructural facilities which are needed for adopting blended learning is poor in the rural colleges and classroom lecture recording facilities are not available in the all classrooms. Most of the colleges has only 1 smart room and also not equipped enough number of technological materials. From the above discussion, it is clear that the undergraduate students of Bengal are ready to adopt blended learning as regular mode of learning but the higher education institutions and educational system need to renovate for adopting blended learning.

**Suggestion:** According to NEP 2020 to attain SDG 4 (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) the disparity between rural and urban educational institutions should be removed and quality education must be provided by the government. To ensure inclusive and high-quality education National Policy of Education recommended to adopt blended mode of instruction. For implementing blended learning, a great number of infrastructural facilities are needed. The research findings indicating some suggestions which need to be addressed for implementing blended learning successfully. These are:

- ✓ A positive attitude needs to be developed among the teacher and administrators. This is not true that no facilities are available to make the learning process more interestingly but the attitude of the stakeholders makes the system long-winded.
- ✓ Colleges have smart classrooms but most of the smart classrooms does not have required material, if any they are not in working condition. Government needs to grant more funds for the needed equipment.
- ✓ College libraries have e-learning materials partially but most of the materials are not useful for the students. Colleges should be encouraged to develop e-learning material fully and make the students aware about the e-learning materials.
- ✓ Most of the colleges from urban areas have the facilities to record the classroom but after having the facilities they do not send the videos to the students. Government should issue a guideline to the colleges to record the class make the recorded copy available to the students.
- ✓ College campuses are Wi-Fi enabled but the facility is not for the students. Colleges should provide free internet to the students.
- ✓ Electronic gadgets and free internet must be provided by the government to each of those students who are socio-economically disadvantaged.
- ✓ Workshops related to the OER and MOOCs need to be conducted in every college especially in rural colleges to make the students aware about the e-learning facility and recent developments in the field of education.

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