Inclusion and Access to Technology in ODL programs – A Case of Commonwealth Executive MBA Program in Bangladesh

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Abstract

Distance learning process is a growing phenomenon across the world. The technological innovations can offer more effective techniques to distribute the academic knowledge in a more flexible way than that in campus learning system. This study will brief the current scenario of the access and inclusion issues of technology to the learners enrolled into different ODL programs, Commonwealth Executive Master of Business Administration (CEMBA) at significant relationship between the progress of the learners and the access Bangladesh Open University (BOU) in particular. This study will use an econometric technique to analyze the results using a primary data set collected from the regional learning centers across the country. Then, we will explain the current scenario of the learners' access and inclusion into various technologies and the scope the use of technologies for the betterment of the CEMBA program. The study will also investigate the impact of technology use on the delivery of tutorials and student support services. This study finds there is no statistically and use of technologies. The study also finds that the learners' expectation about technology use is very high and the sufficient resources or initiatives should be taken by the BOU to boost up use of technologies in CEMBA program.

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1. Introduction

Globalization, technology and the demographics are simultaneously changing the idea of international business, preparing the executives and future managers through various skill and knowledge developing process. Distance learning can be an effective process to train these executives, and spread out education to the learners who are struggling to acquire academic knowledge due to sufficient income, time constraints etc., especially in the developing countries. For example, the benefits of distance education for school-age children are increasing in enrollment. In such way, the education can reach underserved regions; provide broader opportunity for students who are unable to attend traditional schools, access to resources where the instructors are not locally available, and increases in student-teacher communication. It is evident that the students in virtual schools showed greater improvement than their conventional school counterparts in critical thinking, learning and problem-solving independently, creative thinking, decision-making, and time management in the developed countries.

Distance learning is a learning system where the learner works alone or in a group, following study materials arranged by the instructor in a location apart from students. In such cases, the students have the opportunity to communicate with an instructor with the help of various media (i.e., text, telephone, audio, video, social media devices, emails, etc). Also, distance learning may be executed along with the face-to-face meetings. Although distance learning system in Bangladesh started in 1956, it got a high wave and a strengthened institutional status following the establishment of Bangladesh Open University (BOU) after having the BOU Act was passed by the parliament in 1992. The figure below shows the time path of distance and open learning in Bangladesh at a glance:

1956	1962	1978-80	1983	1985	1992
Audio-Visual Cell **(AVC)**	Audio-Visual Education Centre **(AVEC)**	School Broadcasting Program **(SBP)**	National Institute of Educational Media and Technology **(NIEMT)**	Bangladesh Institute of Distance Education **(BIDE)**	**Bangladesh Open University (BOU)**

The Government of Bangladesh and the Asian Development Bank (ADB) have provided funds for setting up the University. The Bangladesh Open University is a breakthrough to grab the chance and to pursue the objectives to enrich knowledge of people, especially the drop out school children, disadvantage groups, skilled and unskilled working class, rural people, job seekers and women who couldn't afford to have regular education. In such cases, the BOU can play a very significant role to provide educations. The Bangladesh Open University (BOU) is the only university, which offers the distance learning programs i.e., secondary (SSC), higher secondary (HSC), undergraduate and graduate levels across the country.

Bangladesh Open University offers two types of programs: formal and non-formal, through 6

(six) different schools, launching 23 formal and 19 Non -formal programs. Formal programs at BOU consist of four levels Certificate, Diploma, Degree and Masters. The enrolled learners for the formal programs collect the BOU prescribed books from Regional Resource Centers (RRC), Coordinating Offices (CO) and Tutorial Centers (TC). BOU prepares audio-visual materials and arranges a 25 minutes radio broadcast every day and 20-25 minutes television broadcasts five days a week. Each year for every formal program BOU conducts two examination, one each semester. The non-formal program at BOU doesn't conduct any examination. The objectives of non-formal programs are to let people be conversant with modern and sustainable techniques in agriculture, poultry farming, health and nutrition, environment protection etc. Table 1 shows the total number of enrolled students into different programs offered by BOU.

The technological advances of Bangladesh in the recent past are remarkable, which can create a big shift in the ODL delivery in the country. As the access to technologies are increasing rapidly all over the country, a new paradigm of learning can easily be opened up by incorporating online video lecture transmission, e-mail, social media, and so on. These modules can function either as components of the e-learning process or as the basis for instruction.

Starting with a brief overview on the Commonwealth Executive MBA in Bangladesh, the paper explains the present status of technology use among the learners of CEMBA and BOU's initiatives to include the learners into ICT-based instructional resources. Then the paper identified the relationship status between the learners' learning progress and the level of their technology use. Then the paper presented the facts related to the expectation of the learners regarding the technology use for the enhancement of delivery and learner support system in BOU programs. Finally, the paper presented some recommendations for increasing the use of technologies in ODL programs of BOU in effective and efficient manner.

2   Background

2.1   An Overview of CEMBA program at Open University, Bangladesh

The Commonwealth Executive Master of Business Administration (CEMBA) Program started its journey in 2002 as an outcome of collaboration among the Commonwealth of Learning (COL) and four open universities in South Asia such as Allama Iqbal Open University (Pakistan), Bangladesh Open University (BOU), Indira Gandhi National Open University (IGNOU) and the Open University of Sri Lanka (OUSL). The Commonwealth of Learning aims to empower people with the learning that enables them to be agents of economic and social development.

"Our goal is to deliver high quality learning and professional development opportunities - with our Commonwealth Partner Universities - that complement existing MBA programs in the participating countries" - COL.

Since its inception, the CEMBA Program has been expanded significantly among the commonwealth nations (for details, visit http://www.col.org/Pages/default.aspx) . Now the total of nine universities in Asia, Africa, the South Pacific and South America are in CEMBA/PA consortium. The newly joined universities are: the Kwame Nkrumah University of Science and Technology (Ghana), National Open University of Nigeria (Nigeria), University College of the

Caribbean (Jamaica), University of Guyana (Guyana), University of Papua New Guinea (Papua New Guinea), Wawasan Open University (Malaysia).

The School of Business, Bangladesh Open University launched CEMBA/CEMPA programs in 2002 as the first international graduate programs under the auspicious of Commonwealth of Learning (COL) and in collaboration with other foreign universities. It was certainly a great privilege for BOU Business School to be one of the pioneering schools in South East Asian region to launch the CEMBA/CEMPA programs. Since their inception, the programs got high response from the people engaged in various managerial positions at different public, semi-public and non-governmental organizations in Bangladesh. The demand for the program has been gradually increased all over the country in last few years, which is evident in Table-1.

Table 1: Total students enrollment in different programs in 2010-2011 Session

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Enrolment	333	174	90	135	133	170	206	241	172	164	192	201
Female	35	15	9	14	14	21	18	24	18	10	15	27
Male	298	159	81	121	119	149	188	217	154	154	177	174

Source: Commonwealth Learning (COL) & Bangladesh Open University Data banks.

The learners are motivated to enroll into the CEMBA and CEMPA programs for several reasons. Figure 1 shows the factors mostly motivate the learners to enter into these programs. Most of the learners (49%) reported that they enroll into CEMBA and CEMPA programs for their self-satisfaction. Twenty two percent of the learners think that they will get promotion in their job after having the
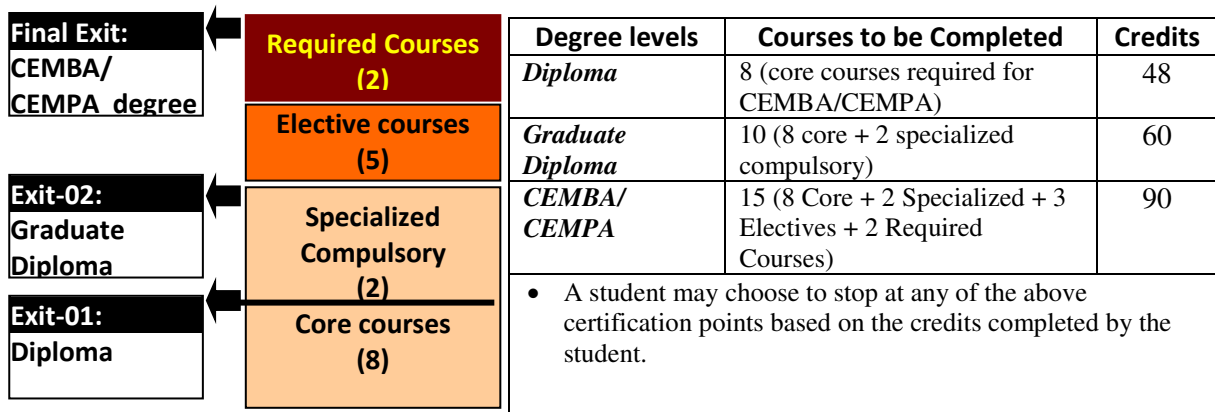
Figure 1: Motivational factors for enrollment into CEMBA and CEMPA programs
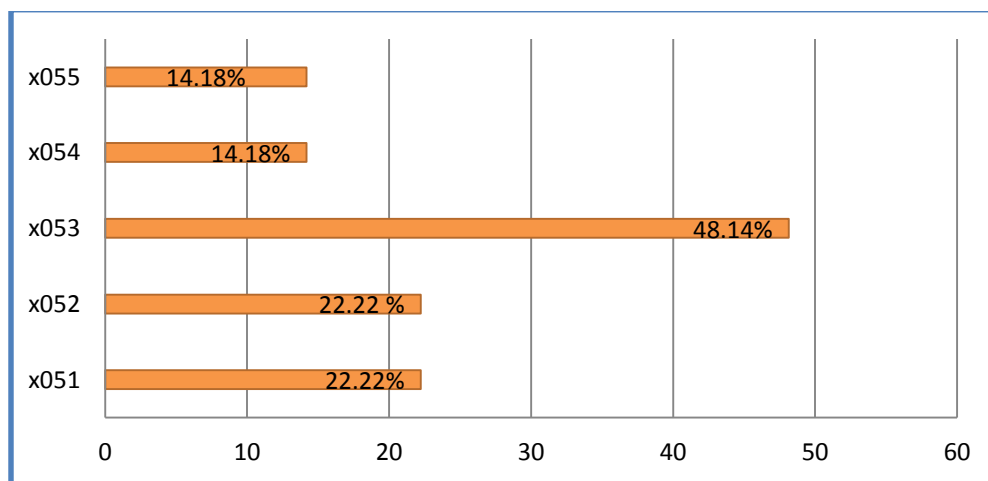
Note: x051= thinking for having a suitable job, x052=for having promotion in for current job, otherwise 0, x053= for self- satisfaction, x054=for going abroad for job purposes, x055=for migrating abroad.

CEMBA degree. Some of the learners think that the degree will help them to have immigration into Canada, while some others think that this degree will help the learners a better job abroad.

The CEMBA and CEMPA Programs have been designed for busy working professionals, in response to their growing demands for post-graduate level education in business and public administration. The flexible and modular form of the program allows students to choose either Business Administration (MBA) or Public Administration (MPA) as their major field of study. In addition, students have the option of several exit points in the programs, such as diploma, graduate diploma or a master degree [Figure 2]. The minimum completion time for the Commonwealth Executive MBA is two years.

Figure 2: Structure of CEMBA and CEMPA Programs

Degree levels	Courses to be Completed	Credits
Diploma	8 (core courses required for CEMBA/CEMPA)	48
Graduate Diploma	10 (8 core + 2 specialized compulsory)	60
CEMBA/ CEMPA	15 (8 Core + 2 Specialized + 3 Electives + 2 Required Courses)	90
• A student may choose to stop at any of the above certification points based on the credits completed by the student.		

Final Exit: CEMBA/ CEMPA degree ← Required Courses (2) / Elective courses (5)

Exit-02: Graduate Diploma ← Specialized Compulsory (2)

Exit-01: Diploma ← Core courses (8)

2. Literature Review

After the mass usage of information and communication technologies, the approaches for delivering educational materials such as lectures on basic courses, international business courses are rapidly changing. The evolution of information and communication technologies can mediate distance barriers or time constraints for acquiring academic knowledge significantly. Cavanaugh (2001) analyses the effects of distance learning on K-20 students. He considers various factors including academic content area, grade level of the students, role of the distance learning program, role of the instructor, length of the program, type of school, frequency of the distance learning experience, instructor preparation and experience in distance education, and the setting of the students. He uses meta-analysis and finds an ambiguous result among these factors.

Most of the students in distance learning system are matured enough, who can acquire the idea following by the on line materials staying at their convenient places. Thus, the learning is much easier than the traditional systems. Stewart and Waight (2008) explain how e-learning teams asses their adult learners within corporate settings. They set two questions as a) what is the nature of the e-learning solutions in these cases?, and b) what strategies did the e-learning teams used to value adult learners? The nature of the e-learning solutions in these cases depends on e-learning context, e-learning format, types, and numbers of courses. They asses the adult learners in terms of front-end analysis, content selection, content sequence, and presentation, interactions, standards, assessments, locations, and transfer. They conclude that e-learning teams and their efforts to value adult learners in their e-learning solutions are influenced by factors such as team size, team talent, company size, and technology. The results of the cross-case analysis offer a synthesis that e-learning teams can use for benchmarking and evaluation. Autant-Bernard and

LeSage (2011) explain the nature of technological externalities and space by associating a geographical dimension with the sectoral dimension. They estimate a knowledge production function using a panel data from 1992 to 2000, to examine spatial spillovers associated with public and private research expenditures in own- and other-industry sectors for the sample of 94 French regions. They find that the largest direct and indirect effects are associated with private R&D activity that spills across industry boundaries.

Bentley, Shegunshi, and Scannell (2009) investigate the distance learning support systems of a UK University's overseas MBA program. This program is offered to some other places around the world i.e., Zurich, Hamburg, Poland, Oman, India, and South Africa in alliance with the overseas local higher educational institutions (HEIs), and is delivered primarily via on line courses along with periods of face-to-face teaching by both UK and local staffs. They evaluate the learning support mechanisms that are used to deliver this program overseas, and to determine their impact on the learning experience of the MBA students. They use a primary research method, questionnaire surveys which were conducted over two periods: April - July 2008, and January - March 2009. The rest survey showed a high level of satisfaction with the MBA program as delivered, indicating some areas required for further improvement.

Bangladesh, a developing country focuses on the technological developments in the recent past to boost up her economic productivity. The current government of Bangladesh set a plan titled Vision 2021 to execute all the administrative activities of the country using the digital system, is working towards the destination. The distance learning process in Bangladesh can be supplemented by various technological devices, which are widely used all over the country. This project will evaluate how technological devices can help the distance learning program, especially CEMBA throughout the country. As most of the CEMBA learners are executives, working at various well reputed public and private organizations, having expertise to use the latest technologies; they can easily extract the maximum benefits from the technology. This will definitely contribute to the growth of their organizations, and the country as well.

3. Methodology and Data

3.1 Methodology

This study uses the following ordinary least square (OLS) methodology to explain the dependency of the CEMBA learners on different technological devices available in the country.

$$y = \alpha_0 + \alpha_1 z_1 + \alpha_2 z_2 + \alpha_3 z_3 + \alpha_4 z_4 + \epsilon_1$$

y is the number of level (semesters) for CEMBA
z_1 using TV programs for study purposes
z_2 average time talking in a week (in a week)
$z_3 = 1$ for using computer for study, otherwise 0
z_4 average time (in munities) spent online for study purposes
$\epsilon_1 1$ is the error term.

3.2 Data

Primary data is collected from the two regional Dhaka and Chittagong learning centers of the Bangladesh Open University.

4. Result Analysis

Technological devices i.e., as mobile phone, television, computer, etc. are very useful to the students/learner. Sometimes, a learner may miss the tutorial session, which can be retrieved if the online materials are available. The learners can also talk to his/her fellow learners over phone; s/he may not need to arrange a physical meeting. In addition, they can also watch the TV broadcasts to comprehend the important concepts of the study course. In the case of ODL, the technological devices can be used effectively to ensure highest flexibility to the learners - *any learner* can learn *anytime* from *anywhere*.

Although it is true that using technologies enhances the quality of the ODL programs and allows the learners speed up their studies, a peculiar relationship between the ICT access and the learners' learning outcomes has been observed in the study. Table 2 shows how the academic progress of the CEMBA/MPA learners is sensitive to the use of various technological devices available in Bangladesh. It has surprisingly been found that even though the learners got access to various technologies, these accesses don't have any significance influence on the learners' educational advancement in BOU programs. One important implication of the insignificant causality between technology use and the educational advancement of the learners is that the learners don't use technologies for educational purposes as the technology use in BOU programs is negligible. For example, the learners don't watch TV broadcasts for educational purposes as they don't have any schedule well advance and the program contents do not provide any benefit to the learners. Similarly, most of the learners have cell phones but

Table 2: CEMBA Learners Dependence on different technological devices

|	Coefficients	Std. Error	t-ratio	p-value
constant	2.16253	0.63415	3.41010	0.00251
z_1	0.00446	0.00186	2.40050	0.02527
z_2	0.20133	0.47200	0.42660	0.67385
z_3	0.83417	0.63418	1.31540	0.20193
z_4	-0.00208	0.00189	-1.10180	0.28245
F test statistic with $df(4; 22)$		=	2.15686	

Note: z_1 = using TV for study purposes, z_2 = minutes talking with the co-learners for study purposes, z_3=uses of computers for study purposes, z_4 = internet uses in minutes for study purposes.

they don't find any educational use of this device as there are not cell phone-competent educational materials. Another implication of the insignificant relationship would be the nature of learners' business in their offices as they are serving as executives. They may barely manage

time to have a discussion over phone, which would be helpful to progress in the program. The F test statistic shows that coefficient of TV programs, talking over phone, or using personal computers and using online educational materials are statistically insignificant. The average weekly munities for talking over phone on CEMBA/MPA reading materials are 65, and the standard deviation is so large (125). This means the use of mobile phone is not consistent for study purpose.

The aforementioned insignificant relationship between technology use and the learners' academic advancement doesn't mean that the learners do not think technology use can boost up the quality and flexibility of ODL programs. It is expected that aforementioned coefficients in Table 2 would be significant if appropriate technologies can be used for educational purposes. If the learners find their educational benefits from the technologies, they will then expand the use of technologies for their educational advancements. Figure 3 shows the CEMBA/MPA learners' thoughts about the use of technologies for the enrichment of ODL programs. The learners strongly believe that most of the technologies are good for the enrichment of the BOU programs. They think that TV broadcasts in its present condition can't benefit the learners. However, TV broadcast can be more effective and popular if the educational programs can be broadcasted based on learners' needs at their convenient time. The interesting fact here is the use of social media for study purpose. All the responded agreed that face book can be used as an effective tool for educational deliveries and learner supports.

Figure 3: CEMBA Learners Thoughts on Technology for enriching the Program
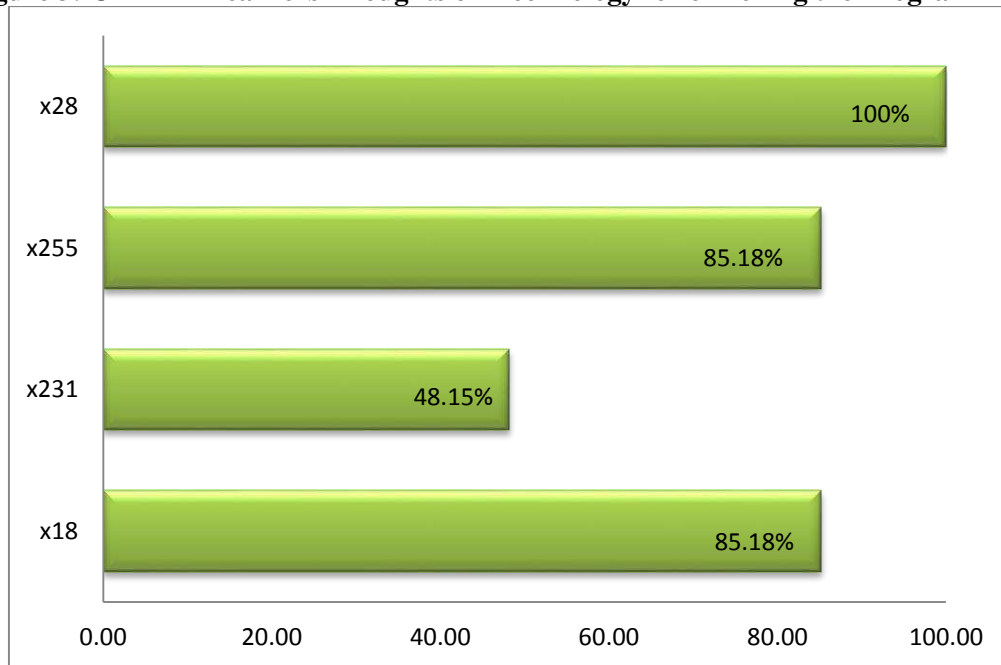
Note: x18= thinking for using mobile phone for study purposes, x231=thinking the TV programs, BOU is useful to help learners for study, x255= reading electronic materials for study purposes on computers x28=for thinking the social media (face book) as useful tools.

Not only the learners think that the use of modern technologies will enrich the performance of the ODL programs, their access to technologies are also impressive. Figure 4 shows the status of the learners' access to technologies such as smart phone, computer and internet.

Figure 4: Access to different technological devices of CEMBA Learners
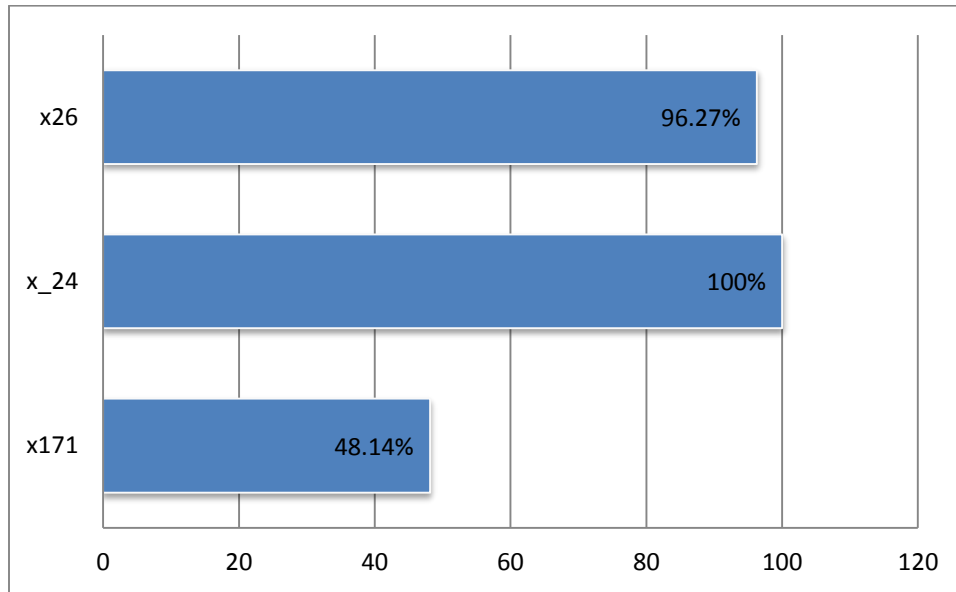
Note: x171= having smart phone, x_242=having computer access, x26= having online access.

It has been found that almost all the learners use computers, and on line access. Around 50% of the CEMBA learners have smart phone. But most of them use personal computers for on line connection rather than using smart phone. The BOU doesn't have online courses, online learners' support system and online evaluation for learners' or instructor's academic achievements. The learners use computers more as they need use it to go through the electronic version of their study materials. Figure 5 shows the use of different technologies among the CEMBA/MPA learners for study purposes.

Figure 5: CEMBA Learners use technological devices for study purposes.
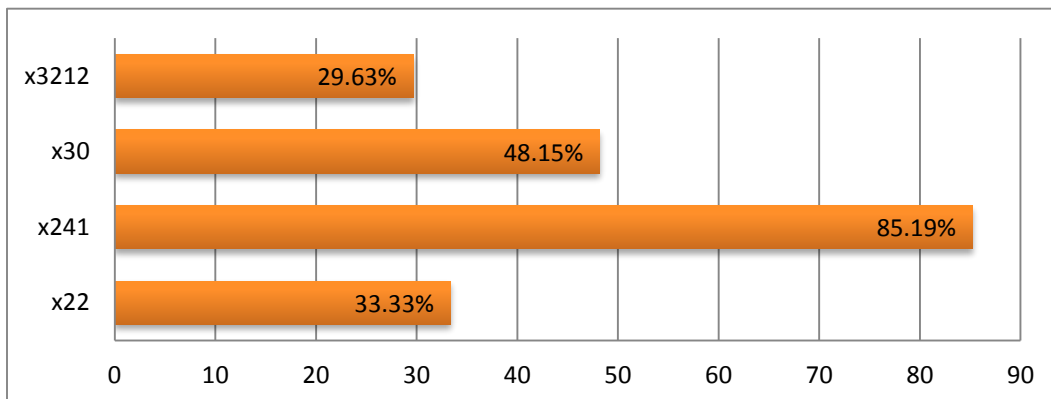

Note: x22= for using TV for study purposes, x241=using computers for study purposes, x30= familiarity with OER, x3212= using face book for study purposes.

Although it may not be equally true for all the programs, the learners of CEMBA/MPA got sufficient access to modern technologies and they are more or less e-ready. Any ICT intervention seems got huge potentials for the improvement of quality and flexibility in the ODL deliveries. Figure 6 show a remarkable growth in the graduation rate (yearly) in the CEMBA/MPA programs of BOU in last few years.

The growth in CEMBA/MPA graduation truly reveals the effect of the ICT intervention in the educational deliveries and learners support system. The recent use of e-mail service, drop box and face book for sharing the soft copies of the study materials, real-time communication with the learners and tutors, peer-peer interactions, etc. created a push in the graduation rate of CEMBA/MPA programs. The learners feel more confident now as they get real-time feedback and information by email and face book.

Figure 6: Trend in graduation rate
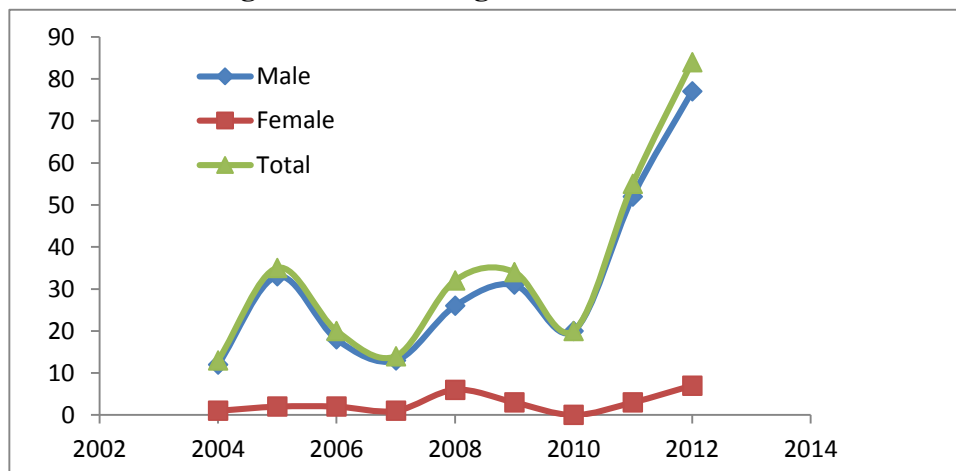
Source: Commonwealth Learning (COL) & Bangladesh Open University Data Banks.

5. Conclusion and recommendations

Using ICTs is very crucial for ODL program. However, choosing a technology wrongly not only creates an unnecessary financial burden for the institution, but also the students will be impacted/suffered continuously due to the wrong technology choice. It is very important to make the best decisions possible in choosing a technology. We must remember that a technology choice can speed up the students' learning, or slow it down. It can transparently support an activity or can create a barrier in the way of its completion. It can make their experience richer, or frustrate them and cause them to question why the technology was ever selected. Therefore, when choosing what technology to use to deliver a course at a distance, there are a wide variety of items to consider. Careful thought and attention to these items will ensure that the technology will meet the objectives of the course, will be viable for institution, will be convincing to the instructor, and most importantly, to the students. The following alternative steps can be taken to accelerate the use of ICTs in ODL program of BOU:

- Lobbying the government to invest more in expanding ICT infrastructure all over the country.

- High speed internet connectivity must be increased throughout the country.
- People must be trained enough before ICTs are introduced.
- ICTs must be gender friendly and unbiased.
- Easy access to ICTs should be ensured before adopting ICTs in the educational programs.
- Collaboration with other leading and successful open universities like IGNOU, STOU, OUM and UKOU on the ground of ICT-based materials sharing may be established for mutual benefits. A policy may be formulated on the common use and development of e-learning and m-learning contents among SAARC universities.
- A *standing committee* should be formed to design a 'ICT guideline for ODL' in the SAARC countries.

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