A Study of Effectiveness of MOOC in English Language Teaching and Learning in Maritime Institute in India

Mr. Dattatraya B Belekar

Research Student, PAHSUS, Solapur

Prof. (Dr.) Deepak Nanaware

Professor, Head, Department of English, DAV Velankar

College of Commerce, Solapur

Abstract:- The main purposes of this research paper is to check the effectiveness of Massive Open Online Courses (MOOC) in Teaching and Learning of English Language in Maritime Institute in India. Due to the technological advancement in 21st century, the use of different applications has streamlined teaching and learning of English language in different ways. Also the drastic changes are found in Teaching and Learning in all types of education. With the emergence of easily available and fast communication channel due to the technological advancement, use of various platforms and different applications has simplified the teaching and learning English language. In the era of globalization, digitalization has fetched easy and quick access of internet to every nook and corner of the world.

This paper mainly focusses on the Effectiveness of Massive Open Online Courses (MOOC) in Teaching and Learning of English as secondary language in Maritime Institute in India. In the current scenario various online tools and different types of applications are being used in teaching and learning of English Language in India. MOOC is one of the important platforms to provide different types of free and suitable online courses for each and every individual those want to enroll. Most of the Maritime institutes are only providing the residential courses all over the world. In India also all the Maritime institutes are affiliated under 'The Directorate General of Shipping', Government of India only. It is mandatory for all maritime institutes to follow all rules and regulations prescribed by the 'The Directorate General of Shipping', Government of India.

1

I. INTRODUCTION

India is having a very outstanding tradition of providing number of good quality of officers that regularly serving the world's merchant marine fleet. Immediately after the independence Indian government's has taken the initiatives to establish excellent maritime training institutes in India.

The Directorate General of Shipping, Government of India, in its pursuit to evolve as a highly effective, efficient, responsible and progressive maritime administration, recognizes the need to develop and sustain a pool of competent seafarers catering for global and national maritime industry. Maritime Training Institutes of a vast seafaring nation like India have a significant role to play in fulfilling this vision. In this context, it is imperative for the Directorate General of Shipping to implement robust systems to administer, supervise, approve, and monitor the efficiently. Professional competence and dedication towards the duty is very important for all the seafarers on board. The Indian Maritime University (IMU) plays an important role to provide the trained and capable officers for the maritime sector in the country. The IMU has been established to provide quality education for the maritime training institutes in India, and to act as an umbrella to all maritime institutions in the country. B. Tech. (Marine Engineering) and B. Sc. (Nautical Science) programs are two main programmers affiliated to IMU.

Lot of students are studying under the maritime institute in India, but, only few per cent Marine Engineering graduates are employable. A soft skill has become very important in maritime industry, but they are routinely ignored by students and the institutes due to the limitations of the time frame. The lack of ability of the individual to deliver his views effectively at the interview leads to rejection of even the most brilliant candidate. This is because maritime students do not make an effort to develop their skills in a wholesome manner which can contribute towards client-handling and team communication skills. As all the affiliated programmes under the Directorate General of Shipping are residential, hence, all the cadets and training institutes should follow all the rules and regulations set by the Directorate General of Shipping time to time.

TODAY'S CLASSROOM SCENARIO OF MARITIME INSTITUTE IN INDIA

As per the affiliation rules all the maritime courses are residential courses, students have to remain present in the campus only while training period is going on. While taking the admission for any maritime training courses it is mandatory to be physically fit. All the students of maritime courses mandatorily have a minimum of 85% of attendance in order to appear in the End Semester Examinations like Theory examination as well as Practical examination at the each semester end. All the students are fully busy throughout the day, their physical training schedule start early in the morning before the 5.30am and day closes late in the evening at around 10.00pm with regular attendance muster.

Hence, all the students of maritime courses are fully busy throughout the day, in regular teaching –learning schedule they have to learn their regular syllabus prescribed by the Indian Maritime University (IMU) or any affiliated body. So in a day time they won't get much timing to improve or enhance their English language communication skills. After college hours they have to manage all this activities like improving their communication skill. Hence Massive Open Online Courses (MOOC) is the best alternative for the residential students like maritime courses.

II.   PARTICIPANTS-

The study was carried out with 60 participants from Maharashtra Academy of Naval Education & Training (MANET) of MIT-ADT University, Pune, Maharashtra. In which 44 were male cadets and 16 were female cadets participants. The participants in the study were from second year under graduate course of B.Tech. Marine engineering.

III.   OBJECTIVE (s)

Main objective of this research paper is to enhance communication skills and competencies for proper and effective implementation of Massive Open Online Courses (MOOC) in Teaching and Learning of English Language in maritime institute in India. This study will empower Teachers as well as Students in practicing the online resources effectively. Also

understand the pedagogy associated with such usage, for ICT based teaching and learning English Language in maritime institute in India.

The objective(s) of this research are-

➢ To determine the basic problems of Marine engineering graduates towards the unemployment.

➢ To determine the factors influencing in effective implementation of online resources in teaching & learning English language in maritime institute in India.

➢ To develop the Massive Open Online Courses (MOOC) for teaching & learning English language in maritime institute in India.

➢ To investigate advantages - disadvantages of Massive Open Online Courses (MOOC) in English Language learning in maritime institute in India.

IV.   METHODOLOGY:-

To check the effectiveness of Massive Open Online Courses (MOOC) while teaching as well as learning of English language at undergraduate level in in maritime institute in India, experimental research methods help to achieve the target of this study. This research paper divided in both Qualitative and Quantitative research. In quantitative research method the experimental research design and the marks obtained from the achievements test decide the effectiveness of MOOC in teaching as well as learning of English language at undergraduate level in maritime institute in India. For this research study researcher implemented different types of courses from MOOC to improve the communication skills for maritime students in India. However certain qualitative aspects such as questionnaires survey by individual students have also been taken into consideration.

The experimental method (Quantitative research methodology) used to check the effectiveness MOOC in teaching and learning of English language at undergraduate level in in maritime institute in India. And questionnaires survey method (qualitative method) is also used for checking the effectiveness of Massive Open Online Courses (MOOC) in teaching and learning of English language at undergraduate level in in maritime institute in India.

4

The collection of the data for this study has been collected by the two main ways: first data has been collected from the students of maritime institute in India and second via questionnaires survey with students of maritime institute in India. For this study purpose researcher selected the one maritime institute i.e. Maharashtra Academy of Naval Education & Training (MANET) of MIT-ADT University, Pune, Maharashtra as one of the sample for the maritime institute in India.

To check the effectiveness of Quantitative research methodology the researcher has select 60 students from Maharashtra Academy of Naval Education & Training (MANET) of MIT-ADT University, Pune, Maharashtra for the experimental method. Then selected 60 students from selected maritime institute has divided in to two groups 30 students for control group and 30 students for experimental method. Then Control group students has studied by traditional method of learning English language and reaming 30 students (i.e. experimental group) used the effective implementation of MOOC in English language learning. For the qualitative method (questionnaires survey) researcher has distribute the questionnaire to 60 students from Maharashtra Academy of Naval Education & Training (MANET) of MIT-ADT University, Pune, Maharashtra. The data has been collected by two way test (Pre-Test and Post Test), one test (Pre-Test) has been conducted for all selected students before the special training given to the experimental group and post-test has been conducted after the special training given for the experimental group. After that all the data collected from both the test has been process for this studies.

V.   DATA ANALYSIS –

The samples of 60 students were selected from Maharashtra Academy of Naval Education & Training (MANET) of MIT-ADT University, Pune, Maharashtra, and then it has been divided in two groups i.e. Experimental group and a Controlled group. Each group consisted of 30 students. They were taught by the process of effective implementation of MOOC in teaching and learning of English Language for undergraduate students of marine engineering in India.

Statistical Analysis: (Post Test)

In experimental research, the data obtain from the post test from both the group controlled group and experimental group. After implementing the tradition teaching program on controlled group and special training to the experimental group, the scores from both the groups were noted down and tabuled as follows:

Table No.: 1: Statistical Analysis of Scores

Roll	Controlled Group	Roll	Experimental Group
1	11	31	18
2	13	32	19
3	15	33	20
4	16	34	18
5	14	35	18
6	13	36	17
7	17	37	18
8	16	38	19
9	14	39	20
10	11	40	20
11	12	41	19
12	16	42	14
13	17	43	11
14	14	44	14
15	16	45	19
16	13	46	18
17	13	47	19
18	11	48	16
19	10	49	17
20	10	50	18
21	14	51	20
22	10	52	20
23	10	53	19
24	10	54	18
25	12	55	17
26	12	56	18
27	13	57	16
28	13	58	18
29	10	59	20
30	9	60	20

Analysis : According to the above Table No. 1 it shows that the Scores obtain form the both group controlled and experimental group are different.

1) Mean of post test in control group is 12.83

2) Mean of post test of Experimental Group is 17.93

Hence, it was observed that, there was difference between the mean of two groups, the mean of experimental group was around 17.93 and mean of controlled group was around 12.83. It is also noted that the mean of the experimental group was more than the controlled group and the difference between the both was 5.1 points.

3) Mean in post test has increased from 12.83 to 17.93, in Controlled group to Experimental group there is gain of 5.1 score points.

It is concluded that the achievement of both the groups after the post test results shows that the controlled group has less scores than the experimental group.

4) From Above three we can conclude that there is significant improvement in student's achievement in experimental group.

Statistical Analysis Table (For T - Test)

Table : 3.2 Statistical Analysis of Scores for t-test

Sr. No.	G1	G2	M1	X-M1X	M2	Y-M2Y	X^2	Y^2	XY
1	11	18	12.83	-1.83	17.93	0.07	3.34	0.01	-0.12
2	13	19	12.83	0.17	17.93	1.07	0.02	1.14	0.18
3	15	20	12.83	2.17	17.93	2.07	4.7	4.28	4.49
4	16	18	12.83	3.17	17.93	0.07	10.48	0.01	0.22
5	14	18	12.83	1.17	17.93	0.07	1.36	0.01	0.08
6	13	17	12.83	0.17	17.93	-0.93	0.02	0.86	-0.15
7	17	18	12.83	4.17	17.93	0.07	17.38	0.01	0.29
8	16	19	12.83	3.17	17.93	1.07	10.04	1.44	3.39
9	14	20	12.83	1.17	17.93	2.07	1.36	4.28	2.42
10	11	20	12.83	-1.83	17.93	2.07	3.34	4.28	-3.78
11	12	19	12.83	-0.83	17.93	1.07	0.68	1.14	-0.88
12	16	14	12.83	3.17	17.93	-3.93	10.04	15.44	-12.45
13	17	11	12.83	4.17	17.93	-6.93	17.38	48.02	-28.89
14	14	14	12.83	1.17	17.93	-3.93	1.36	15.44	-4.59
15	16	19	12.83	3.17	17.93	1.07	10.04	1.14	3.39
16	13	18	12.83	0.17	17.93	0.07	0.02	0.01	0.01
17	13	19	12.83	0.17	17.93	1.07	0.02	1.14	0.18
18	11	16	12.83	-1.83	17.93	-1.93	3.34	3.72	3.53
19	10	17	12.83	-2.83	17.93	-0.93	8	0.86	2.63
20	10	18	12.83	-2.83	17.93	0.07	8	0.01	-0.19
21	14	20	12.83	1.17	17.93	2.07	1.36	4.28	2.42
22	10	20	12.83	-2.83	17.93	2.07	8	4.28	-5.85

23	10	19	12.83	-2.83	17.93	1.07	8	1.14	-3.02
24	10	18	12.83	-2.83	17.93	0.07	8	0.01	-0.19
25	12	17	12.83	-0.83	17.93	-0.93	0.68	0.86	0.77
26	12	18	12.83	-0.83	17.93	0.07	0.68	0.01	-0.05
27	13	16	12.83	0.17	17.93	-1.93	0.02	37.24	-0.32
28	13	18	12.83	0.17	17.93	0.07	0.02	0.01	0.01
29	10	20	12.83	-2.83	17.93	2.07	8	4.28	-5.85
30	9	20	12.83	-3.83	17.93	2.07	14.66	4.28	-7.92
Total	385	538					160.16	125.86	-50.33

Analysis : In the above Table No.2 shows that Statistical Analysis of Scores for t - test obtain form the both group controlled and experimental group. The standard deviation of the both the test were calculated for the result purpose. So the,

1) S.D. in control group is 2.313

2) S.D. in Experimental group is 2.048

It was observed that, there was difference between the standard deviation of two groups, the SD of experimental group was around 2.048 and SD of controlled group was around 2.313. Hence, it is noted that the SD of experimental group was lesser than controlled group. And the difference between the both SD was 0.265 points.

3) S.D. in Experimental group has come down from 2.313 to 2.048. There is reduction of 0.265 points.

4) Hence, from the above references researcher has concluded that, experimental group is more homogeneous as compared to control group.

Mean Analysis (Control & Experimental Group) :

Table: No.3 Mean Analysis (Control & Experimental Group)

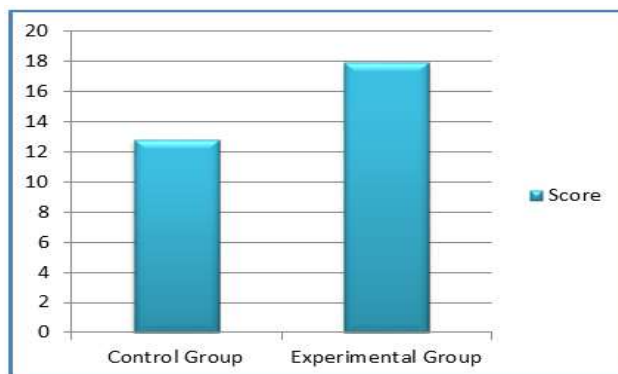| Test Mean	Control Group	Experimental Group
Score	12.83	17.93

Graphical Analysis of Mean Scores :

Fig. 1 Graphical Analysis of Mean Scores

Analysis by Group:

For this research study, researcher has taken help of MOOC programme for checking the effectiveness of use of MOOC in English language learning. So, it is expected to be better than traditional classroom teaching and learning and lead to higher achievements than traditional classroom teaching and learning of English language in maritime training institute in India.

1: Control Group:

The main objective of control group was to understand student's perspectives about the English language learning with traditional method. Based on the scores in the post test of control group, researcher concluded that the result or score obtained by the students in control group was comparatively lower than the experimental group.

The samples statistics as depicted in Table No.4 compares the Mean, N, Standard Deviation, and Standard Error of Control Group. Mean of control group is 12.83 is actually being tested against zero. S.D. in control group is 2.313.

Table No.4 Sample Statistical for the Controlled Class

	Mean	N	Std. Deviation	Std. Error Mean
Test Marks	12.83	30	2.313	0.422

2: Experimental Group :

For experimental group, MOOC integrated activities were carried out during spare time for English Language learning in maritime institute. In addition to this, students in this class frequently did the interactive lessons with MOOC after college hours.

The samples statistics as depicted in Table No.5 compares the Mean, N, Standard Deviation, and Standard Error of the Mean for the experimental group. Mean of post test in control group is 17.93 is actually being tested against zero. S.D. in Experimental group is 2.048. Then it is conclude that, there is a significant difference between means of two groups (traditional method and MOOC based learning). Therefore for the experimental class, the null hypothesis is rejected.

Table No.5 Sample Statistical for the Experimental Class

	Mean	N	Std. Deviation	Std. Error Mean
Test Marks	17.93	30	2.048	0.374

3: Comparison Between Experimental and Control Group:

In the controlled group, the students followed the normal classroom language activities. They were not given an MOOC based program lessons and this means the students belonging to this group did not do the interactive lessons. After implementing the traditional teaching English for English language, test was conducted that included listening comprehension and an oral component was administered and once again the mean scores were recorded. The online MCQ based test was held on that day and the marks added to the main test. In the experimental group, the students followed the MOOC based program for English language learning activities. They were given suitable MOOC based program lessons and this means the students belonging to this group did the MOOC based interactive lessons. Test was conducted after implementing the MOOC based program for teaching and learning of English language. It included listening comprehension and component was administered and once again the mean scores were recorded. The online MCQ based test was held that day and the marks added to the main test. The test was carried out for control group and experimental group. This means that the same questions that tested a set of skills were administered for

both the groups. The statistical output for the paired-samples 't' test is given below. The paired samples statistics as depicted in Table No.6 compares the Mean, N, Standard Deviation, and Standard Error of each variable that is given.

Table No.6 Pearson Paired Sample Correlations for the Controlled Class

	N	Correlation	Sig.
Test Marks	30	-0.354	0.05

The mean difference of Đ 5.1 is actually being tested against zero. Mean in post test in Control group and Experimental group has increased from 12.83 to 17.93. There was gain of 5.1 score points in Control group to Experimental group. This can be considered as the mean difference is rather grater (> 1). S.D. in Experimental group has come down from 2.313 to 2.048. There was reduction of 0.265 points. Researcher has selected 0.05 level of significance to test the validity of hypothesis. Value of df is 29 on 0.05 level of significance is (t = 2.04). Actual t value t = 7.80 is greater than sample (2.04) and as this mean difference is significance at 0.05 level. It can be conclude that there was significant improvement in student's achievement in experimental group.

Table No.7 Paired Sample test for Experimental Group score – Controlled Group Score

	Paired Differences				
	Mean	Std. Dev.	Std. Error Mean	t	Sig.
Experimental Group score – Controlled Group Score	5.1	0.265	0.048	7.80 (Sample t =2.04)	0.05

1) Researcher has selected 0.05 level of significance to text the validity of hypothesis.

2) Value of df is 29 on 0.05 level of significance is (t = 2.04).

3) Actual t value t = 7.80 is greater than sample (2.04) and as this mean difference is significance at 0.05 level, it can be said that the difference is not due to differentiation between sample, and significance is real.

From above references, researcher has concluded that, there is a significant difference between student in control and experimental group post test scores, and Null hypothesis is rejected at 0.05 level.

VII. CONCLUSION:

According to this study, the MOOC based learning enhances the English language learning as second language in Maritime Institute in India. This study provides a method or opportunity to enhance the learning of English as second language through the use of different types of MOOC in English Language Learning for the maritime students. Hence, there is effective English language learning as second language learning scenario outside the classroom.

- MOOC based learning allows different types of programs and courses, it provides large number of options for maritime students for English language learning. Students can get any program as per their requirement.

- MOOC based learning is easily available and it also reduces expenses as compared to the other resources. MOOC based programs is more inexpensive than other courses. Course materials like textbooks are often available for free. Many MOOCs are free certificate courses

- MOOC is more suitable online tools for maritime students in India. Lectures and other materials are electronically sent to the student. Students can study the online material and complete their assignments. Students will not have to fight traffic, find parking spaces, leave regular class or work early to attend the class. Students can preview the syllabus and most of the course materials for free

- MOOC is more convenient and flexibility for the maritime students. It allows students to plan their study in free time. MOOC Courses are flexible, students can start any time and study at their own pace. Deadlines are flexible according to students schedule.

- MOOC based learning help career advancement for maritime students. It allows students to enhance their communication skill so it will automatically help to get the better career options. Students can engage and take feedback with their fellow learners.

- MOOC based learning allows more interaction and help to concentrate on the subject they are learning. For shy students it offers the opportunity to participate in class discussions or chats. Some students reported that MOOC based courses are easier to concentrate because they are not distracted by other students and classroom activity.

References :-

- Becker, H.J., Wong, Y. T. and Ravitz, J. L. (1999). *'Teaching, Learning and Computing'* Irvine: University of California.

- Collis, B., & Moonen, J. (2001). *Flexible learning in a digital world. Experiences and expectations*. London: ISBN.

- Cox, M.J. (1999). *'Motivating pupils through the use of ICT.'* Coventry: NCET.

- Cox, M.J. (1999). '*The Effects of Information Technology on Students'* Motivation, Coventry: NCET.

- Gilchrist, B., Myers, K. and Reed, J. (1997). *'The Intelligent School'*. London: Paul Chapman.

- Kumar K.L. – (1996) *'Educational Technology',* New Delhi, New age in International Publishers.