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A study on the impact of NPTEL (national program on technology enhanced learning) video lectures on students with special reference to Guru Nanak Institute of Technology, Ibrahimpatnam, Hyderabad

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Abstract---Technical education has been playing an active role in human resource development of the country by generating skilled manpower, developing industrial productivity and improving the quality of life of its people. The present study demonstrates various aspects of use of NPTEL videos such as frequency of library visits, purpose of using videos, awareness about NPTEL videos, place of accessing, preferred search, search method, level of satisfaction of internet facility, and problems faced by students while using NPTEL video lectures. Well-structured questionnaire was developed to collect the data. Out of 168 questionnaires, 152 filled in questionnaires were received. The methodology adopted for this study is descriptive statistics. The major finding is students of Guru Nanak Institute of Technology used NPTEL as part of their teaching-learning process. This study also highlights the suggestions made by the students who are the respondents of the study. There is a gap that exists between the current expertise level of faculty in institutions of higher learning such as the IITs/IISc and those in private and other government aided engineering institutions in India.

Keywords---technical education, NPTEL, video lectures, online learning.

Introduction

Engineering, Technology, Management, Architecture, Town Planning, Pharmacy, Applied Arts and Crafts, Hotel Management, and Catering Technology are

included in technical education. It has been actively contributing to the country's human resource development by creating skilled workers, increasing industrial productivity, and enhancing people's quality of life. In India, technical education dates back to the Epic and Vedic periods (1000BC and 1000BC, respectively) (Prior to 500BC). Technical skills such as carpentry, foundry, and weaving were taught at this time. Following that, in the mediaeval period, the occupational skill rose to prominence. The School offered training to Indian personal in modern land survey and also aided the British surveyors. Technical education was quickly expanded to other regions of the country and passed down from generation to generation. At first engineering education covers only two branches i.e., Civil Engineering and Mechanical Engineering while electrical engineering was started from 1882 only. The expansion of technical education in the 19th century had witnessed the birth of many branches like mining, shipping, textile, printing etc. Since, then, engineering profession is constantly changing as well as developing at a rapid rate. Its growth is never ending and becoming more and more complex.

NPTEL e-content

In 2003, National Programme on Technology Enhanced Learning (NPTEL) had launched seven Indian Institutes of Technology (Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati, and Roorkee) and the Indian Institute of Science (Bangalore). In this phase, 235 courses in web/video format were produced in five key disciplines: civil engineering, computer science and engineering, electrical engineering, electronics and communication engineering, and mechanical engineering.

The primary objective of NPTEL Phase II (2009-14) was to expand on the engineering and core science courses that had been introduced in Phase I. A total of 600 new web and video courses in all main areas of engineering, physical sciences at the undergraduate and postgraduate levels, and management courses at the postgraduate level were established. Several enhancements were made, including keyword search and indexing of all video and online courses.

Table 1 : NPTEL

Area of specialisation	Subject domain	Courses	E-content
Aerospace engineering	Engineering and Technology	37	848
Atmospheric science	Physical science	4	121
Basic courses(Sem 1 and 2)	Engineering and Technology	38	593
Biotechnology	Medical and health sciences	24	662
Chemical engineering	Engineering and Technology	71	1379
Chemistry and Biochemistry	Engineering and Technology	34	601
Civil engineering	Engineering and Technology	100	1995
Computer Science and	Engineering and	81	2234

Engineering	Technology		
Electrical Engineering	Engineering and Technology	68	1626
Electronics & Communication Engineering	Engineering and Technology	74	2064
Engineering Design	Engineering and Technology	11	102
Environmental Science	Agricultural Sciences	3	19
General	Engineering and Technology	3	60
Humanities and Social Sciences	Arts and Humanities	47	1255
Management	Social sciences	33	1048
Mathematics	Physical science	57	1234
Mechanical Engineering	Engineering and Technology	132	2567
Metallurgy and Material Science	Engineering and Technology	31	678
Mining Engineering	Engineering and Technology	2	45
Nanotechnology	Engineering and Technology	5	122
Ocean Engineering	Engineering and Technology	19	773
Physics	Engineering and Technology	38	925
Special series	Engineering and Technology	6	237
Textile engineering	Engineering and Technology	16	657

Source: www.nptel.ac.in

Review of Literature

According to Krishnan (2009), The NPTEL (National Programme on Technology Enhanced Learning) is the result of a collaboration between many Indian Institute of Technology and Indian Institute of Science. It was established in 2003 with the mission of creating curricular resources for higher education in all disciplines of science and engineering. It has developed the world's largest publicly accessible curriculum-based video collection in technical education and pledges to build a successful open education forum. This paper contains information on the programme as well as a list of activities that will be taken in the near future. Majumder & Sarma (2010) explained that the Indian universities are digitising their course materials and establishing open courseware such as eGyankosh-a National Digital Repository, CEC Learning Object Repository, IndoGerman eGurukul on Digital Libraries, NPTEL, NCERT Online Textbooks, UNESCO-SALIS eLearning Portal. This article offers a picture of Indian Open Courseware efforts that might be beneficial and important to e-learners.

Kanjilal & Kaul (2016) revealed that this was the country's first attempt into E-learning, including online Web and Video courses in Engineering, Science, and Humanities. The National Mission on Education via ICT (NMEICT), which was launched in February 2009, expanded the scope to include all disciplines in the Higher Education sector. Currently, the NMEICT has created a large amount of e-content that is available under the CCBY-SA licence. NPTEL has created e-content for 933 courses, the Consortium of Educational Communication (CEC) for Undergraduate subjects in 67 topics, and the University Grants Commission (UGC) for Postgraduate subjects in 77 disciplines.

Objectives

1. To identify the impact of NPTEL videos on students.
2. To know the purpose of using NPTEL videos.
3. To know the satisfaction of users on video lectures.
4. To know the problems faced by the students in accessing NPTEL videos.

Research Methodology

Well-structured questionnaire was used to collect the data from the students. For this, a questionnaire was prepared and distributed to 168 engineering students of Guru Nanak Institute of Technology. Out of 168 students, 152 students have responded. Total response from the students (users of NPTEL video) is 94.26%. The collected data is presented in the form of tables and analysed by using a simple method of calculation.

Scope of the Study

The present study focuses on the impact of NPTEL videos on engineering students with respect to Guru Nanak Institute of Technology, Ibrahimpatnam, Hyderabad.

Data Analysis

S.No.	I. Gender	No. of respondents	Percentage
1	Male	78	51.31
2	Female	74	48.68
	Total	152	100
	II. Awareness on NPTEL videos	No. of respondents	Percentage
3	Yes	152	100
4	No	0	0
	Total	152	100
	III. Place of accessing videos	No. of respondents	Percentage
5	Library	120	78.94
6	Department	19	12.50
7	Internet centre	13	8.55
	Total	152	100
	IV. Frequency of watching	No. of respondents	Percentage

	NPTEL Videos		
8	Since last 3 yrs	104	68.42
9	Since last 2 yrs	22	14.47
10	Since last 1 yr	26	17.10
	Total	152	100
	V. Purpose of watching NPTEL Videos	No. of respondents	Percentage
11	To get knowledge on subject	37	24.34
12	To prepare for competitive exams	19	12.50
13	To appear for GATE exam	28	18.42
14	All of the above	68	44.73
	Total	152	100
	VI. Preferred search method	No. of respondents	Percentage
15	Author	3	1.97
16	Title	17	11.18
17	Subject	124	81.57
18	Keyword	8	5.26
	Total	152	100
	VII. Preferred method of lecture	No. of respondents	Percentage
19	Method of instructor speaking directly in front of camera	78	51.31
20	Power point presentation	24	15.78
21	Black board	50	32.89
	Total	152	100
	VIII. Problems faced while watching videos	No. of respondents	Percentage
22	Lack of availability of computers	23	15.13
23	Slow access	26	17.10
24	No problem	93	61.18
25	Lack of support from the library staff	10	6.57
	Total	152	100
	IX. Need for training programme/Orientation	No. of respondents	Percentage
26	Yes	24	15.78
27	No	128	84.21
	Total	152	100
	X. Participation in the discussion platform of NPTEL	No. of respondents	Percentage
28	Yes	58	38.15
29	No	94	61.84
	Total	152	100

	XI. Opinion on impact of NPTEL Videos on their study/research	No. of respondents	Percentage
30	Yes	99	65.13
31	No	53	34.86
	Total	152	100

Findings

From the data, it is clear that:

1. 78 (51.31%) respondents are male. About 74 (48.68%) respondents are female.
2. 152 (100%) respondents are aware of NPTEL Videos
3. 120(78.94%) respondents were watching NPTEL videos in the library. Whereas 19(12.50%) respondents were accessing in the department. About 13(8.55%) respondents were accessing from Internet Centres.
4. 104 (68.42%) respondents have been watching videos for the last three years. About 22 (14.47%) respondents have been watching videos for the last two years and 26 (17.10%) respondents have been watching videos for the last one year.
5. 68(44.73%) respondents are watching to get knowledge on subject, to prepare for competitive exams and to appear for GATE exam whereas 37(24.34%) are watching to get knowledge on subject and about 28(18.42%) respondents are watching to appear for GATE exam and about 19 (12.50%) respondents are watching to prepare for competitive exams.
6. Students followed different search methods such as Subject search 124(81.57%), Title search 17(11.18%), Keyword search 8(5.26%) and Author search only 3(1.97%). But maximum number of respondents opt the Subject search method.
7. Students preferred different methods of lecture. 78 (51.31%) respondents preferred method of instructor for speaking directly to the camera. About 50(32.89%) respondents preferred black board method. About 24 (15.78%) respondents preferred PowerPoint presentation.
8. About 93(61.18%) respondents told that they did not face any problem while watching videos. About 26 (17.10%) and 23 (15.13%) respondents faced slow access of Internet and lack of availability of personal computers and about 10(6.57%) respondents faced lack of support from the library staff.
9. 84.21% of respondents felt that no orientation/training is necessary to access videos and remaining 15.78% felt that any orientation or training was necessary for the same.
10. 94(61.84%) of respondents did not participate in the discussion platform of NPTEL whereas 58 (38.15%) respondents are participating in the discussion platforms.
11. 99 (65.13%) respondents expressed their opinion that there is an impact of NPTEL videos on their Study/Research and about 53 (34.86%) respondents replied in negative.

Suggestions

1. Faculty members may require students to watch NPTEL videos. In other situations, interested students are just watching the lectures on their own time, either as a replacement or complement to class lectures.
2. 92 (62.16%) of respondents did not engage in the discussion platform of NPTEL. The study suggests that faculty members should encourage students to engage in forums by providing them homework.

Conclusion

NPTEL is a curriculum building exercise. The courses are well structured and are elaborate with details wherever the faculty members have felt the need. Institutions are encouraged to build their own versions of NPTEL courses based on their curriculum design using the NPTEL materials and collective experience of all IITs and IISc in TEL. They are meant to fill the large gap that exists between the current expertise level of faculty in institutions of higher learning such as the IITs/IISc and those in private and other government aided engineering institutions in India. NPTEL contents are being used by the students of Guru Nanak Institute of Technology as part of their teaching-learning process. While faculty members are using these contents as part of their lesson plan to teach university curriculum, students are using NPTEL not only to prepare for technical jobs and competitive exams, but also as a platform for constant learning and updating knowledge for the ever-changing environment and market realities. There is an impact of NPTEL video lectures on students' study and research.

References

1. Ahmed,T and Satija, M.P. (2005), "Growth of technical education at degree level in Punjab: A historical perspective", The Indian Journal of Technical Education, 28(3), pp.81-91. Available at http://shodhganga.inflibnet.ac.in/bitstream/10603/7053/7/07_chapter%202.pdf
2. Awale,S.D.(1996), "Engineering teachers in the development of technical education system in India", ISTE, New Delhi.p.3
3. <http://mhrd.gov.in/technical-education>
4. <http://nptel.ac.in/faq.php>