

Availability and Impact of NPTEL in Selected Engineering Colleges Around Thiruvallur District Tamil Nadu: A Case Study

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Abstract - Due to fast development of information and communication technology, student and faculty needs relevant and current information as on time, they quickly adapted into print form to electronic form in current scenario. More demand of digital information leads to remarkable position of increase in publication sector and usage of EIS in all discipline especially science and engineering. In view of more e-resources demanded, NPTEL is an Indian portal dedicated and provides technical e-content to solve this issue of one side increased e-resource demand and other side deficiency of qualified faculty. This paper studies the impact of NPTEL on student and faculty in engineering colleges of Thiruvallur district, Tamil Nadu. It focuses out the variations in perceptions and preferences of user using NPTEL. It is found that majority of respondents accessed NPTEL for their teaching and learning purpose. Most of the respondents opined that NPTEL is very useful for teaching and research purpose.

Keywords - Electronics information, NPTEL, Higher Education Colleges, E-content, Video courses.

I. INTRODUCTION

Indian economy is growing at a fast pace presently. Sustaining this growth requires technically trained professionals in large number. It requires providing education and training to population in increasing number. The technological advancement can be of great help in this regard. Studies needs to evaluate Technology Enhanced learning, with particular reference to NPTEL - a portal dedicated to technical e-content(video/web) These programs fulfilled the gap between the user and subject expert from various places from major Indian technical institution. One side short of subject expert in engineering and technical area and other side user needs are increased toward the digital form of information.

This NPTEL video/web course program is helped to the faculties and student in the field of engineering and technologies. This paper deals with the NPTEL program

availability and impact among selected engineering colleges in Thiruvallur district, Chennai.

II. LITERATURE REVIEW

According to Pillai s Deepti, Dr. Kevin Stephen (2013) The study shows how free access to quality enhanced & technology enabled web and video content in the Engineering & Science subjects has many takers in the form of students, faculty members & working professionals from urban & rural parts of India, as well as from 140 different nations. Boumarafi, Behdja,(2010) made an attempt to determine present status of Electronic Resources at the University of Sharjah Medical Library: An Investigation of Students' Information-Seeking Behavior. The highlighted the importance of e-resources and usage level. M. Tariq Bandaya, et al.,(2014) Applications of e-Learning in engineering education: A case study explains that results are discussed in light of relevant research to suggest recommendations for improving e-learning implementations in engineering education.

III. NPTEL (National Programme on Technology Enhanced Learning)

The National Programme on Technology Enhanced Learning (NPTEL), proposed for the first time in 1999 by Professor M. S. Ananth, Director, IIT Madras and funded by the Ministry of Human Resource Development, Government of India, has developed curriculum based course contents for more than 240 engineering courses in five disciplines at the undergraduate level. The programme has been executed jointly by all seven Indian Institutes of Technology (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and the Indian Institute of Science, Bangalore. More than 350 faculty members from the above have participated in the programme to develop content. It is coordinated by the IIT Madras.

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The disciplines covered are Civil Engineering, Computer Science and Engineering, Electrical Engineering, Electronics and Communication Engineering, Mechanical Engineering and Core science, Management Studies and Language courses that all engineering students are required to take. The course contents are available freely on the Internet (URL: <http://nptel.ac.in>). The courses have been prepared in two formats, namely as web based lectures (slides, chapters or modules with animations), or as a sequence of thirty to fifty video recorded lectures of one hour duration each. They are modularized in such a way that a large part of each course covers basic learning materials for different University syllabi throughout the world on that topic. The contents of video lectures are available as video streams on demand through the generous offer of free web hosting by YouTube : <http://www.youtube.com/iit>). The video archive that has been created through this project is the single largest open video archive containing contents in engineering and technical courses at the undergraduate level anywhere in the world. Contributed by more than 200 faculty members from all partner Institutions in this project, it is also a unique exercise in which eight competing Indian academic institutions of international repute have worked together to deliver a common cause, namely, improve current engineering education in India and at the same time, provide for any student in the world to undertake a systematic and self-study of engineering concepts. Approximately 5,000 one hour video lectures have been recorded under this programme. More than 3,500 hours have been made available already through the above site, with the rest to be uploaded within the next few months. Many different styles and pedagogies have been accommodated using a few simple guidelines for faculty contributors to adopt in content creation through the video and the web. The web based contents are already registered with Google Analytics and the statistics provided by Google is being used to study the effectiveness of this programme.

IV. PROFILE OF ENGINEERING COLLEGES IN TIRUVALLUR DISTRICT

A. R.M.K. Engineering College

The college was established at 1995 with 7 UG courses and 4 PG courses. The present strength of student and staff about 4500. The Computerized and Automated Air – Conditioned Central Library in an area of 1125 sq.m, the Library has 70188 Volume of Books with 20379 Titles. The Library subscribes 148 national and 478 International Journals. The Library Subscribed E –resources are available.

B. R.M.D. Engineering College

The college was established at 2001 with 5 UG courses and 2 PG courses. The present strength of students and staff about 3860. The Computerized and Automated Air-Conditioned Central Library of the college has a collection of nearly 48126 books, 11495 titles , e-resources such as e-journal, e-books, NPTEL web and video e-learning courses(as mandatory by AICTE/UGC).

C. R.M.K. College of Engineering & Technology

The College is located at Pudukottai, Thiruvallur District, was founded in 2007. In the year 2008, was recognized by Anna University (AU), Chennai with 5 U.G departments. The present strength of the students and faculty about 2130. The College Library Contains 16295 Volumes of books with 3248 titles. The Library also subscribes to 60 National Journals and 25 Magazines. Library has digital resource facility including NPTEL video and web courses for students and staff.

D. Vellammal Engineering College

The College is located at Surapet, Redhills Thiruvallur District, was founded in 1995-96, was recognized by Anna University (AU), Chennai with 5 U.G departments. The present strength of the students and faculty about 5000. The Library also subscribes National and international Journals. Library has digital resource including NPTEL facility for students and staff.

E. Prathyusha Institute of Technology And Management

The college is established at 2001 and located at Aranvoyalakuppam, Tiruvallur. Prathyusha Institute of Technology And Management, Chennai popularly known as PITAM. PITAM is a self-financed Telugu Minority Institution approved by AICTE, affiliated to Anna University, accredited by NBA and a recipient of ISO certification. The college offers 7 UG courses and 7 PG Courses with an annual intake of 1068 students. The over all students strength of the college is 3000. Collge have subscribed digital materials including NPTEL.

F. Indira Institute of Engineering and Technology

The College is located at Pandut Thiruvallur District, was founded in 2002, was recognized by Anna University (AU), Chennai. With 5 U.G departments under Anna University. The present strength of the students and faculty about 2000. The Library also subscribes National and international Journals. Library has digital resource facility(npTEL) for students and staff.

Established in 1990, Aalim Muhammed Salegh Trust aims to impact technical and medical education to aspiring students. It also focuses on providing educational opportunities to students belonging to weaker social and economic sections as well as to those who hail from backward communities. was recognized by Anna University (AU), Chennai. With 5 U.G departments under Anna University. The present strength of the students and faculty about 5000. The Library also subscribes National and international Journals. Library has digital resource facility (NPTEL) for students and staff.

V. OBJECTIVES OF THE STUDY

1. To examine the frequency of access NPTEL video and web content;
2. To Find out the level of access point of NPTEL;
3. To know the purpose of using NPTEL;
4. To find out the Road block(problem) for access NPTEL;
5. To guide road map for maximum level of usage to end users.

VI. METHODOLOGY

The present study was conducted using questionnaire-based survey method; The questionnaire was pre-tested on users which included the two groups; the faculty and students. A total number of 350 questionnaires (randomly) were administered among the users of selected engineering colleges in Thiruvallur District Under this study. Out of which 300 (85.71%) questionnaires were received back duly filled in. The sample respondents chosen for the study consists of 100 (33.33%) faculties, and 200 (66.66%) students. The data collected were tabulated and analyzed with simple percentage method.

VII. SCOPE AND LIMITATION

There are nearly 33 engineering colleges in Thiruvallur District Affiliated to Anna University. The present Research is based on a random sample of users (faculty members and students) from 7 engineering colleges. The present study is confined only to the Thiruvallur district engineering college students and faculty members.

VIII. DATA INTERPRETATION AND ANALYSIS

TABLE I DISTRIBUTION TO RESPONDENTS'S GENDER WISE

Gender	Respondents	%
Male	163	54.34
Female	137	45.67
Total	300	100

Table I shows that 54.34% male respondents were participated and 45.67% female respondents are major part of this survey.

TABLE II FREQUENCY OF VISIT TO THE LIBRARY

Frequency	No. of respondents	%
Daily	173	57.66
Several Times week	71	23.66
Once a week	28	9.33
Once a month	23	7.66
Occasionally	05	1.66

Table II Highlighted that majority (57.66%) of respondents are visiting to the library and accessing daily. Subsequently several times a week (23.66%), once a week (9.33%), once a month (7.66%) and very few (1.66%) respondents opined that they are visiting library occasionally.

TABLE III DISTRIBUTION OF RESPONDENTS ACCESS AND AWARENESS

Position	Experience of awareness		
	1-2	3-5	6-10
Student	128	70	NA
Faculty	53	26	23
Total	181(60.33%)	96(32.00%)	23(7.66%)

Table III Shows that respondents have experience of accessing NPTEL video and web courses. Majority of respondents 181(60.33%) have experience in Nptel access about 1-2 years. and 3-5 years 96(32.00%), 6-10 years 23(7.66%) respectively. This data clearly shows that majority of respondents have awareness of using about 1-2 years because of NPTEL e-content were designed and organize the purpose of teaching, learning and research activities.

TABLE IV DISTRIBUTION OF RESPONDENTS FREQUENCY OF ACCESS PER DAY

Hour	Student	Faculty	%
1-2	118	15	39.33
3-4	42	32	14.00
4-5	40	53	13.33

Table IV Highlighted that frequency of access NPTEL per Day. Majority (39.33%) of Respondents access 1-2 hours per day, The followed by (14%) respondents were accessed 3-4 hours daily,(13.33%) respondents were accessed 4-5 hours access. This study found that respondents were accessed 1-2 hours daily for their learning process at remarkably because of student have cyclic library hour and laboratory period and faculty have leisure hour.

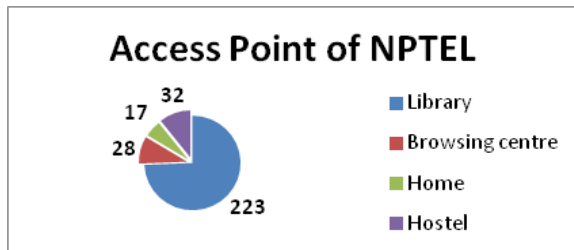


Fig. 1 Highlights that most favored access point

Majority of them (74.33%) using from college library, Computer Lab and college Hostel (10.66%). This followed by the other location of access point is Browsing centre 9.33% and Home 5.66%. The data show that majority of user are accessing from their college Library. It is clearly said that library is to take part to provide information to the user.

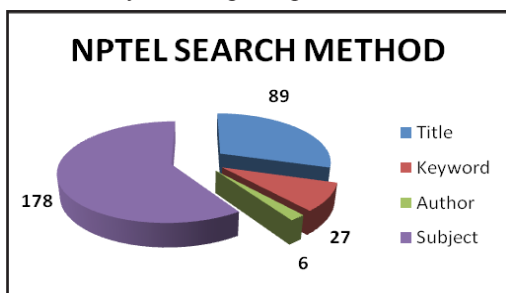


Fig. 2 Frequency of common search technique

More respondents (59.33%) accessed NPTEL using subject search methods for getting information because of other parameter of search methods is not very familiar and this study prove that subject is known for common search technique for respondents because this e-content designed for teaching purpose subject wise. Subsequently using title search 89 (29.66%), keyword search 27 (9.00%) and few respondents 6 (2.00%) opined that access by author search method. It clearly showed that subject is vital sources of search method in NPTEL video/web courses. At the same time author search method is using by few respondents only due to NPTEL e-content author were not familiar and reach to the respondents.

TABLE VII DISTRIBUTION OF RESPONDENTS ACCESS DIFFERENCE SUBJECT

Subject	Respondents	%
Humanites	23	7.66
CSE/IT	78	26.00
Civil	28	9.33
Mechanical	23	7.66
EEE/ECE	148	49.33

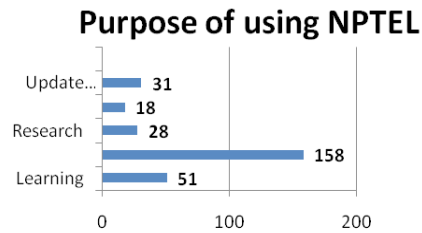


Fig.3 Distribution of respondents for purpose of access NPTEL.

It is highlighted that more respondents 158(52.66%) were accessed for Teaching purpose especially faculty member are using for their class room reference. The next level is learning 51(17.00%) is major role for students and faculty. This is followed by update knowledge 31 (10.33%), Research 28(9.33%) and General studies 18(6.00%).

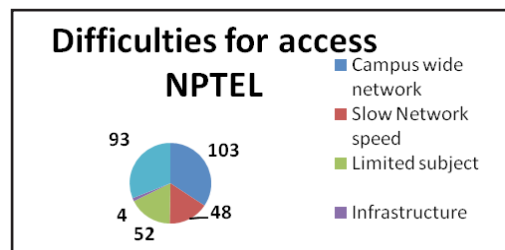


Fig. 4 Difficulties for access video and web courses.

The study shows that respondents answered major problem for access in lack of campus wide network 103 (34.33%) and wi-fi connectivity provided for NPTEL video and web content. In this study noticed it is about some colleges have not campus wide connection. Respondents opined that Difficulties for access followed by Lack of Training (31.00%), some respondents felt that they need some orientation class for how to access this e-content. Limited Subject (17.33%), Slow Network speed (16.00%) and infrastructure (1.3%) respectively. It clearly shows that respondents need awareness and training for NPTEL video and web courses.

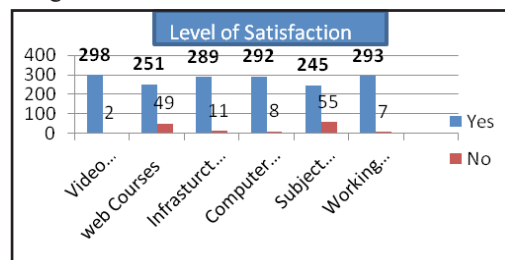


Fig.5 Level of satisfaction in providing NPTEL

Majority of respondents opined the fully satisfied in video courses, web courses, infrastructure, computer facility provided, availability subject, and Staff cooperation.

Few respondents opined that Not satisfied in web courses (16.33%) and subject availability (18.33%). It is highlighted that this video and web courses (NPTEL) is to take part provide to electronic information to the user at maximum level of satisfaction.

XI. FINDING AND SUGGESTION

- It is found that majority of respondents are regular visitor of library in selected Engineering colleges in Thiruvallur District.
- These studies found that more respondents were having experience in access NPTEL with the duration of 1-2 Years.
- It is found that more respondents's browsing point of NPTEL was from college Library and computer laboratory.
- This study clearly show that majority respondents are accessing NPTEL from electrical, electronics and communication subject and followed by computer science and information technology.

Main Objectives of this study is to identify solution to the above difficulties to increase the access to the maximum level of end users. NPTEL digital content of information services should be strengthened by adding more video and web content in different science and engineering subject available in all engineering college libraries.

Information literacy and user education courses with emphasis on retrieval software, tools and techniques of searching, etc., should be provided to all categories of the users. Adequate practical sessions should be included in such courses.

High speed internet, more computer terminals, round the clock service of the libraries and computer centers, should be provided by the colleges.

X. CONCLUSION

As libraries are built with ever-larger collections of electronic resources, finding ways to manage them efficiently becomes a major challenge. The number of electronic journals, citation databases, and full-text aggregations held by most libraries has grown rapidly. Managing these electronic resources involves providing the library's user with convenient ways to find and access them and providing library staff with the tools to keep track of them. Now a day's NPTEL is the new born of digital library collection, as a librarian and faculty should know all the technical parameter of this video and web courses to provide to the user effectively, this study will definitely focus the evaluation of usage and road map for access successfully.

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