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Availability of Non-Residential Engineering Students by channelized On-Line tools after routine college hours

Dr. Mrs. P. Malathi

Vice Principal, DY Patil College of Engineering, Akurdi, Pune, Savitribai Phule Pune University
malathijesudason@gmail.com

Abstract: Top ranked engineering colleges in India like IITs and NITs are providing residential campus for students. This gives them distinct advantages for resource availability and mobility 24x7. Majority of private engineering colleges in Maharashtra are non-residential for students leading to shortage of time for networking, team work related activities. This calls for inculcating an effort to induct a mechanism to cope up these shortcomings.

An attempt has been made in this paper to present a framework of channelized On-Line tools including social media, e-portals, web tutors etc., in an engineering way.

Keywords: Social Media, e-portals, non-residential students

1. Introduction

IITs and NITs are apex engineering institutions in India. In recent years, no. of IITs and NITs are added. About 24 IITs and 31 NITs will be in operation in few years. Apart from strong government financial support, these apex institutions provide On-Campus life to students. This is the distinct feature to students offering residential advantage which is turned into regular studies even after normal working hours [1]. Private engineering institutions in India, even though provide hostel facility, still not able to catch On-Campus life advantage to students that are provided in apex institutions like IITs and NITs. Majority of students in these apex institutes do regular studies even after routine college hours, especially in terms of outcome. Techfest (IIT Bombay) for example, is one of the most popular and largest technical festival in Asia in terms of participants and prize money involved. Even participation in such events requires rigorous preparations, team working and networking by students. This requires beyond working hours and out of box thinking other than standard examination pattern of university curriculum. Majority of Private institutions, students limit engineering studies with respect to class time table and corresponding pedagogies [2].

A group of 82 students, 8 Head of Departments and 10 Senior Faculty members were formed to undergo this study, referred as Study Group (SG).

This paper, describes issues pertaining to non-residential students availability after routine college hours for their professional advantages.

2. Advantages of On-campus Life (Residential Students)

Table 1 provides insights of advantages for students having on-campus life listed by Study Group as described in Section 1.

Sr. No	Characteristics	Description
1)	Networking	Classmates spending time outside classroom together, is crucial for teambuilding, innovative way of solving assignments.

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Sr. No	Characteristics	Description
2)	Less Distraction	To and fro travelling time will be much reduced. Non-academic issues will be less exposed to students
3)	More Hands On	Students devoting more time to instruments, accessories will lead to more hands on of instruments
4)	Diversity	Students can spend more time on academic diversity and generation of interdisciplinary ideas
5)	Community Living	Students can be better exposed to professional ethics and mannerism
6)	Enhanced Profiles	Students can therefore enhance their profiles through various extra-curricular activities apart from academics, more appealing to recruiters.
7)	Research Practices	Students spending after working hours timings in laboratories will enhance research formulation.
8)	Exposure to Professional Environment	Students will be more exposed improvised communication skill.

Table 2.1: Residential Students Advantages

3. On-line learning Tools

Majority of professionals feels, the advent of internet has lead to more distraction to students. This is more worsened by the use of social media. Disadvantages like frauds, spams, negativity consequences, non-academic usages can be faced. However, even though truth lies in above, still the advantages cannot be denied. Advantages like Networking, Reach to recruiters, improvisation of perception, personal characteristics build up etc.

The use of internet, social media can provide distinct advantages if channelized and coordinated properly.

Online teaching strategies help a teacher save his valuable time by incrementally adding and revising his content, which allows him to recollect a previously taught course easy learning from student's perspective Students who feel missed out during lectures can get added opportunity to rejoin in next lecture due to easy accessibility [3].

A wide variety of ICTs should be designed to improve learning experiences by providing more personalized and effective learning environments for students [4].

A series of discussions with Students and Teachers were conducted to know how students approach to studies and professional outcomes to design these ICTs for enhancement. Following can be classified use of On-line learning tools along with its recommended usages.

Sr. No	On-line learning Tools	Characteristics
1)	You-Tube	Dynamic Learning, Useful for strengthening

Sr. No	On-line learning Tools	Characteristics
		subject content and actual viewing of instruments working.
2)	Internet sites like Wikipedia, NPTEL, Slideshare, Spoken tutorials etc	Helpful in design and development of solutions through explorative method.
3)	PODCAST	Digital media containing episodes of videos and audios will be useful in revising the subjects
4)	Dedicated softwares like dypcoeakproduction.myexam.com	Can be used for online practice tests, aptitude test preparations
5)	Social Media like Facebook, Whatsapp and Telegram	Can be used for networking, teambuilding, innovative ways of sharing questions and answers to revive pedagogy.

Table 3.1: Online Learning Tools

3.1 Implementation Framework

Case study is taken by SG for implementation of On-Line tools and its impact analysis is carried out. In private engineering colleges a class strength is ranging upto 100 students maximum and upto 80 students in general. In today's era, whatsapp and Telegram groups above maximum members can be easily accommodated. We had also made 3 groups of faculties across the institution to facilitate collaborative sharing and exchange of ideas rapidly. Facebook account of department can add all stakeholders listed in NBA Tier II programs for facilitating continual interaction providing distinct advantages to Institution. SG recommends following implementation framework.

Sr. No.	Activity	Task Taken	Impact
1)	Telegram Groups of Students for each course	Exchange of notes, ppts, 1 oral question per day, Current research	More participation of students after working hours
2)	Whats app group for students for each class	Exchange of administrative and official information	Students exchange ideas and communicate
3)	Facebook Account (Not just page)	All students are added including alumni and recruiters. All activities images are posted.	Sharing with Alumni helpful in summer internship for students. Showcasing talents helpful for students to create positive

Sr. No.	Activity	Task Taken	Impact
			profile
4)	Whatsapp group for Parents for each class	Students characteristic like attendance, award wining, test result	Peer Pressure to students to perform
5)	You-tube clubs	Online video streaming on topics declared in Whatsapp and students prepare one page report	Participation of Students has increased in college level activities and research activities
6)	Exploration of Websites like TATA Motors, TCS etc	Students explore websites of companies every Saturday and prepare one page report and submit	Students are now more cautious regarding skills required to get inducted in a company and trying to inculcate them during studies
7)	e-exam portal	Practice aptitude tests once in a week	Students are creating positive profile by practicing on regular basis

Table 4.1: Proposed Framework

All the above groups and tasks were carefully monitored by faculty coordinator to waive of disadvantages mentioned in section 3 of this paper.

4. Transformations observed (Conclusion)

As the students are now connected even after routine working hours, following transformations are observed.

- 1) Increase in Average Theory Attendance
- 2) Increase in Performance in Test/Prelim
- 3) Increase in Activity Participation
- 4) Delivery of e-contents via telegram groups had created positive impact in teaching-learning process as students read before attending the classes.

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