

# Effective Implementation of Online Academic Delivery through Innovative Practice League (IPL) Competition

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**Abstract—** Covid-19 pandemic forced academic Institutes to switch from 100% offline to 100% online delivery mode in very short amount of time. Most of academic Institutes were not ready for this change in terms of required faculty training. Also many Institutes lagged essential computing hardware, software, and Internet bandwidth support for effective implementation of ICT based education. Due to pressure from apex bodies like AICTE, peer Institutes, students and parents almost all academic Institutes started implementation of the online academic delivery in hurry. However, this unprepared start caused increased level of frustration among students and faculty community. Very soon a need of effective implementation of online academic delivery was recognized by the different Institutes.

The paper presents how our Institute implemented and ensured effective implementation of online academic delivery using Innovative Practice League (IPL) competition. The paper explains methodology adopted by the Institute in details for improving quality of online academic delivery. The Institute undertook various initiatives at faculty-level, department-level, and Institute-level for the same; the paper discusses the same in details. The paper also presents details of IPL competition and discusses how IPL helped to have awareness of quality issues related with online academic delivery.

**Keywords—** Covid-19; Pandemic; Online teaching learning; effective implementation; Online tools for activity-based learning; Active learning; Innovative Practice League (IPL).

**JEET Category—**Research paper

## I. INTRODUCTION

Covid-19 pandemic emerged as major threat for human life since March 2019. Due to this pandemic entire world got shaken as life of every individual was impacted due to the same. The governments imposed strict lock-downs restricting free movements of people from one place to another place. This adversely impacted functioning of many different types of businesses and organizations. So, there was a severe and urgent need to find out 'new normal' of doing things in different organizations. The academic institutes also severely impacted by all these things. So there was an urgent need to change way of functioning of academic institutes so as to adjust themselves to minimize damage caused by the pandemic.

Prior to Covid-19 pandemic academic institutes were using online academic delivery on rare occasions. Due to guidelines from apex bodies like AICTE, pressure from parents and students' communities, and peer pressure the academic

Institutes started their working in online mode. The institutes were forced to switch from 100% offline to 100% online mode in very short time. However, many Institutes were not ready for the same in terms of required hardware, software, internet-bandwidth and most important faculty training.

At beginning student community accepted online delivery mode as it was new excitement for them. But very soon different limitations of this methods started getting identified. The faculty members were frustrated due to need to spend a lot of time and efforts for requirements which are not related with actual Course. This change was really a big challenge for those faculty members who were not conversant with ICT (Information and Communication Technologies). The students started exploiting loopholes in the online academic deliveries. All these issues raised an urgent need to initiate various steps to have effective implementation of online academic delivery. Such initiatives are very much required to ensure effective delivery of the content and students' participation during the academic delivery.

Taking into consideration the entire scenario our institute prepared plan for improving quality of online academic delivery. This research paper discusses this plan and observations during the implementation. As part of this plan following issues were addressed:

1. Training of faculty members for software's used in online academic delivery.
2. Making good quality computing hardware and equipment's available to faculty members. Also upgrading Internet bandwidth and expanding wireless access of the Internet throughout the campus.
3. Identification of precise parameters for measuring quality of online academic delivery and creating awareness of the same amongst faculty members.
4. Periodically monitoring online academic delivery made by the faculty members and if required offering mentoring by senior faculty members.
5. Using various online tools for active engagement of students during classroom delivery.
6. Organizing Innovative Practice League (IPL) competition to motivate faculty members for effective delivery of content in online mode and awarding best performing faculty members. As part of this competition every individual faculty member and each academic department evaluated for their performance in terms of online academic delivery.

This research paper is organized as follows. The section II presents literature survey on various innovative practices used by different academicians to improve quality of online teaching learning activities. Section III discusses motivation behind the proposed work. Section IV presents proposed approach to improve overall online academic delivery. Section V discusses how Innovative Practice League (IPL) helped in motivating and promoting quality online academic delivery. This section also discusses how IPL is designed to ensure effectiveness on online academic practices executed by individual teachers and academic Departments. The section VI presents IPL evaluation data and observations during the same. The section VII presents concluding remarks of this work.

## II. LITERATURE SURVEY

Sheba (2021) presented a survey on the effectiveness of online teaching-learning methods for university and college students. The authors observed that the following techniques make online learning more effective – use of animations, collaborations with peers using ICT tools, video lectures delivered by faculty handling the subject, online quizzes, a favorable environment at home, resources provided by the faculty in forms of PPTs and lecture recordings. Paul (2019) presented a comparative analysis of students' performance in online vs face to face delivery of environmental science course. The authors observed that overall, there is no significant difference in student performance between online and face-to-face (F2F) learners. Alzahrani (2019) presented effect of distance learning delivery methods on student performance and perception. The author emphasized on use of various ICT technologies like LMS for improving effectiveness of distance learning delivery.

Luaran (2013) is one of early studies on student's perspective on the effectiveness of using e-learning. The authors observed that most of the students were exposed to E-learning and they preferred E-learning due to greater flexibility to learn at any time and place. The students have also flexibility to select either instructor-led or self-study courses. Nguyen (2015) examined different evidences of the effectiveness of online learning. The authors concluded that academicians from higher education institutes are interested in online learning to enhance and improve student learning outcomes while combating the reduction in resources. Mullen (2015) discussed students' perspectives and their expectations about online education systems and practices. Berta (2013) presented a formative study on distance education quality course delivery framework.

Greder (2010) presented evaluation of the effectiveness of online and traditional classroom delivery format for training parenting educators. The authors observed that following aspects helped to improve effectiveness of the online education programs - a quality curriculum, establishment of a learning community, knowledge of instructor about the content, accessibility and professional behavior of instructors, diversity of active learning tools, and asynchronous activities. XU (2007) also presented a case study on effectiveness of online learning program in higher education systems. A research report on the effectiveness of online learning (2011) is another early work in this field.

## III. MOTIVATION BEHIND PROPOSED APPROACH

The above literature survey helped us to understand various issues related with the effectiveness of online academic delivery. Besides this literature survey we also conducted our own survey to understand the exact requirements related with this. As part of our own survey, we informally interacted with different students and faculty members to understand their views and requirements for improving quality of online academic delivery.

We informally interacted with students of various engineering disciplines to understand their expectations from teachers and Institute in terms of online academic delivery. Here, we selected students of various academic competencies ranging from academically weak students to top scorers. We also interacted with teachers from various Departments to know their views and requirements about the various issues related with online academic delivery. Following is the summary of different issues cited by most of the students and faculty members during this interaction –

1. Lack of training to faculty members about how to use online academic delivery software's.

The online academic delivery software's like MS-Team, Zoom, Cisco WebX, GoogleMeet, etc. are popularly used by the academic Institutes. If a faculty member is not well conversant with the usage of these software's and different features available in the same then it degrades overall quality of online academic delivery. Hence hands-on training of such software's is quite essential and it is one if basic step in implementing online academic delivery.

2. Unavailability of good quality computing hardware and equipment's to teachers.

A low configuration computer (in terms of RAM, processing power, Secondary memory size etc.) causes major bottleneck during online lecture delivery. Also, poor quality mikes and web-camera make overall experience of attending online lectures bad. Few more equipment's like writing pads, power backup, Camera stands, etc. are necessary to make the online academic delivery more effective. A high-quality Internet connection is another primary requirement when online academic delivery is happening. It is quite necessary to provide all these facilities to the teachers.

3. Student's expectations related with online academic delivery.

We had informal discussions with students to know their expectations regarding online academic delivery. Following is the summary of their views about this issue. The PPTs are used as primary tool in online academic delivery. Hence quality of the presentations should be quite good. Sometimes students are unable to attend the live lecture (or some portion of a lecture) due to technical or logistic issues. In such cases the faculty members should make recordings of lecture available to students for later references. The online academic delivery should happen with proper planning like regular lectures. Here agenda of each lecture and for every chapter should be well known to students in order to set up right expectations about each lecture.

4. Use of active learning methods during online academic delivery. Also training of faculty members for such tools and methods.

A 60 minutes online delivery without any interaction with students is very less effective. Use of active learning methods and different tools during the delivery definitely increases students' participation. The faculty members should be motivated and trained to use these interaction tools while delivering the content in online mode.

#### IV. PROPOSED APPROACH TO IMPROVE ONLINE ACADEMIC DELIVERY

The Dean Academic office prepared a comprehensive plan to improve overall online academic delivery and to address various issues discussed in Section III. Table 1 gives details of issues related with online academic delivery and approach used to address them.

TABLE I  
ISSUES RELATED WITH ONLINE ACADEMIC DELIVERY AND APPROACH TO ADDRESS THEM

Sr.	Issue Addressed	Method / Approach
1	Faculty Training for required Software's	<ul style="list-style-type: none"> <li>Organized 01 week FDP on "ICT for Academic Delivery and Active Learning Methods". The FDP covered hands-on training of MS-Team and various interaction tools like slido, Kahoot, Google Classroom, Socrative etc.</li> </ul>
2	Upgrading computing equipment available to teachers	<ul style="list-style-type: none"> <li>All faculty members provided with latest computing hardware, good quality mike, web cameras, writing pads, camera stands and high bandwidth Internet connection.</li> </ul>
3	Setting proper expectations about quality of online academic delivery amongst faculty members	<ul style="list-style-type: none"> <li>Following parameters identified for measuring quality of online academic delivery. <ul style="list-style-type: none"> <li>➤ Quality of PPT, Use of active learning methods and tools, Percentage of students participating in classroom activities, Making recordings of lectures and various resources available to students, etc.</li> </ul> </li> <li>The faculty members made well aware about these parameters.</li> <li>The faculty members instructed to maintain online log of each lecture</li> </ul>

		conducted using Google Sheets (Sheet-3).
4	Designing proper monitoring and feedback mechanism to improve quality of academic delivery	<ul style="list-style-type: none"> <li>Module coordinators who are expert in particular domain identified for each course.</li> <li>The module coordinators monitored online Google Sheets maintained by the Course Teachers. They also gone through recorded lectures on random basis.</li> <li>Module coordinators recorded their observations in Google Sheets (Sheet4) and these Sheets used to give feedback to Course Teachers and do mentoring wherever required.</li> </ul>

#### V. INNOVATIVE PRACTICE LEAGUE FOR MOTIVATING AND PROMOTING QUALITY ONLINE ACADEMIC DELIVERY

Innovative Practice League (IPL) competition introduced in the Institute from January 2018. The competition is conducted every year in even semester of the academic year. The competition conducted two times prior to Covid-19 pandemic. Prior to Covid-19 the sole purpose of this competition was to promote active learning methods among all faculty members. As part of this competition, every faculty member has to present one innovative active learning technique used by him/her in the classroom. The competition conducted in two stages – Firstly at each department level and then shortlisted candidates from every department will present their work at the Institute level. The evaluation criteria for competition informed to the faculty members at beginning itself. The winners are awarded with appreciation certificate and cash prizes.

After Covid-19 the nature and format of IPL-2021 competition changed in order to focus on effective online academic delivery. The IPL-2021 addresses issues related with online academic delivery identified in earlier sections of this paper. The IPL designed to ensure effective implementation of various approaches which are listed in Table 1. The IPL-2021 was conducted in 2 parts as follows -:

##### *Part 1: Evaluation of each faculty members efforts in online academic delivery*

Purpose of the part 1 of IPL-2021 is to evaluate and reward best practices followed in online teaching and learning processes by the individual faculty members. Following guidelines were given related with part 1 evaluations of IPL-2021.

Every faculty member should participate in the competition and present the activities of any one course delivered in online mode. The presentation should describe best practices followed and adherence to the quality guidelines given by the institute Academic Cell for implementing online academic delivery. During pandemic period the institute Academic Cell has issued various guidelines to all teaching faculty members time to time

in order to improve effectiveness of online academic delivery. These guidelines are mentioned in Table 1 point number 3 and 4.

Each department should shortlist one best practice and send details of the same to Dean Academic office. The shortlisted

faculty member will present their innovative practices at Institute-level. Top innovative practices demonstrating effective online academic delivery will be awarded with cash prizes. The evaluation criteria for part 1 of IPL 2021 for department-level presentations is given in following table 2.

TABLE II  
PART 1 EVALUATION CRITERION OF IPL-2021 IN DEPARTMENT-LEVEL PRESENTATIONS

Sr.	Faculty Name	Course Name & Code	Class & Semester	Sheet3 properly filled with 36 entries	Sample PPT	100% Resources uploaded on Moodle	Sample Video Lecture	100% Recorded lectures available on Moodle	Name of Active learning methods & Tools used during Delivery	Use of Active Learning Methods and Students participation	Use of Moodle Discussion forum	Course File Level of the Course	Other Information	Score
Marks Allotted				5	10	10	10	10		20	5	15		100
1.	Mr. ABC	C Programming CS1100	FY A Div Sem 1 2020-21											

*Part 2: Evaluation of each academic department for their effectiveness in online academic delivery*

The purpose of the Part 2 of IPL-2021 is to evaluate each academic Department's effectiveness in terms of online academic delivery during the pandemic period. As 2<sup>nd</sup> part of IPL 2021 each Department evaluated on basis of following parameters –

1. Online academic delivery by the Department: 70% weight  
This takes into consideration adherence to quality monitoring guidelines issued to all faculty members of the department.
2. Other online initiatives taken by the Department: 30% Weight

This takes into consideration workshops, webinars, expert lectures, competitions, Virtual Internship Programs (VIP), conferences etc. conducted by the Department in online mode.

Each department was evaluated by a designated team of 2 experts. This team includes another departments HOD and Department Academic Coordinator (DAC). The experts visited the department and verified all efforts taken by the department as per evaluation criterion. Top performing academic departments awarded with cash prizes. The evaluation criteria for part 2 of IPL 2021 is given in following table 3.

TABLE III  
FIRST ROUND EVALUATION CRITERION FOR PART 2 IPL-2021

Sr.	Criteria	Parameter	Marks Allotted	Marks Obtained	Observation Remarks by the Evaluator
1	Online Academic Delivery in Effective Way	Sheet 3 of all faculty members 2020-21 Sem 1	15		
		Sheet 3 of all faculty members 2020-21 Sem 2	5		
		Sheet 4 of all Module Coordinators 2020 Sem 1	15		
		(Avg. Score of Department in IPL 2020 *15 ) / 100	15		
		Course File Level Checking 2019-20 Sem 2	10		
		Course File Level Checking 2020-21 Sem 1	10		
2	Other activities initiated by the Department in Online Mode	Min. 2 training programs for students	5		
		Min. 2 training programs for faculty members	5		
		Virtual Internship Program with min. 20 students	5		
		Min. 10 expert lectures by Department faculty members (Outside RIT)	5		
		Amount of IRG generated through online training (Min. 40,000)	5		
		Any special achievements	5		
		Department Total Score	100		

*1. Evaluating effectiveness of faculty members during online academic delivery*

VI. IPL 2021 EVALUATIONS AND OBSERVATIONS

IPL 2021 evaluations were done in 2 parts. Part 1 evaluated effectiveness of each course teacher in online academic delivery. In part 2 we evaluated effectiveness of each academic department for their work during pandemic period. The details of evaluations of these both parts are given below.

Each faculty members presented their work as per given guidelines in respective departments. The corresponding department HOD and DAC worked as evaluators for these presentations. Every department shortlisted best presentation from their department and shortlisted faculty members presented their work at the Institute level. Table 4 gives



details of list of faculty members who presented their work at institute level in IPL 2021.

TABLE IV  
LIST OF FACULTY MEMBERS PRESENTED AT INSTITUTE LEVEL IN IPL 2021

Sr.	Faculty Name	Department Name	Course Name & Code	Class & Semester
1	Prof. S. R. Desai	Auto	Hydraulics and Pneumatics (AE 3152)	T.Y. B.Tech., Sem - V
2	Prof. Savita N. Patil	Civil	Strength of Material (CE-2053)	S. Y. B. Tech (Sem-III)
3	Prof. V. T. Lokare	CSE	Data Structure and Algorithms CS2032	SY B Tech - Div A & Sem III
4	Prof. A.B.Patil	CSIT	Computer Networks CI203	SY Sem-I
5	Prof. K M.Nathgosavi	Electrical	Microprocessor & Microcontroller EE3091	Third Year B. Tech. Sem V
6	Mr. R.T.Patil	ETC	DSP and DSP Lab EC3012, EC3212	TY Btech Sem VI 2020-21
7	Prof. K. S. Patil	MBA	Indian Financial System (FIN2011)	SY MBA SEM- III
8	Prof. R. A. Magdum	Mechanical	Textile Technology (ME 3161)	TY BTech Sem-I
9	Prof. S. N. Pusawale	Science Humanity	Engineering Physics (SH1311)	F. Y. B. Tech.(Div-A), Sem-I

Table 5 gives details of evaluation sheet used for final evaluations which were done at Institute level round. Three senior faculty members from different departments worked as Judges for Institute level round of presentations. The final winner decided depending on average marks given by the three judges.

TABLE V  
PART 1 EVALUATION CRITERION OF IPL-2021 IN INSTITUTE-LEVEL ROUND

Criterion	Appropriateness of Active Learning Methods used for the Course	Active Learning Evidences & Students Participation	Sample PPT and Sample Recorded Video	Moodle - All uploaded resources, Links of recorded lectures, Quizzes, Assignments, Discussion forum	Google Sheet3 with all entries	Other / Any special method or approach used in academic delivery	Total Score
Score out of	5	10	10	10	5	10	50

Following are some important observations regarding evaluation of effectiveness of individual faculty members in online academic delivery. All faculty members maintained log of their class-room activities in form of Google Sheet3. It is also observed that almost 80% faculty members used various tools like Slido, Kahoot, Socrates, etc. for interactions with students during classroom delivery. There was significant improvement in quality of presentations used by the teachers during academic delivery. On an average 80% video recordings of lectures were made available to students for further reference. It is observed that 100% faculty scored more than 70% marks as per the evaluation sheet. The monitoring and mentoring by module-coordinators further helped in addressing issues if any during course delivery.

## 2. Evaluating effectiveness of Departments during online academic delivery

Table 6 shows evaluation sheet used for final evaluations of part 2 of IPL 2021. The final winner Department decided depending on cumulative scores given by panel of 2 experts, and perception score given by Director and Dean Academics. The perception score represents overall impression that Director and Dean Academics have about various activities done by particular academic department during pandemic period.

TABLE VI  
INSTITUTE-LEVEL ROUND EVALUATION CRITERION FOR PART 2 IPL-2021

Sr.	Department Name	Online Academic Delivery in Effective Way						Other activities initiated by the Department in Online Mode						Total Score in 1st Evaluation	Name of Evaluators	Perception Score by Dean Academics (Out of 20)	Perception Score by Director (Out of 30)	Total Score (Out of 150)
		Sheet 3 of all faculty members 2020-21 Sem 1	Sheet 3 of all faculty members 2020-21 Sem 2	Sheet 4 of all Module Coordinators 2020 Sem 1	(Avg. Score of Department in IPL 2020 *15 ) / 100	Course File Level Checking 2019-20 Sem 2	Course File Level Checking 2020-21 Sem 1	Min. 2 training programs for students	Min. 2 training programs for faculty members	Virtual Internship Program with min. 20 students	Min. 10 expert lectures (Outside RIT)	Amount of IRG generated through online training (Min. 40,000)	Any special achievements					
	Marks allotted	15	5	15	15	10	10	5	5	5	5	5	5	100				

Following are some important observations regarding evaluation of effectiveness of academic departments during pandemic period. All departments conducted various activities in online mode. These activities include students and faculty training programs, arranging expert lectures of industry experts and academicians, generating IRG (Internal Revenue Generation) through different trainings, etc. The department HODs ensures that faculty members are maintaining log of lectures conducted using Google Sheet3. The HODs also ensured that Module Coordinators are monitoring course activities on random basis and recording their observations in form of Google Sheet4. All departments scored more than 110 out of total 150 in part 2 evaluations of IPL-2021.

## VII. CONCLUSIONS

Due to Covid-19 pandemic academic Institutes are heavily depending on online academic delivery since March 2020. Ensuring effectiveness in online academic delivery is highly important. The students' active participation in online academic delivery is very important in order to effective implementation of outcome-based education. Hence academic Institutes need to be methodical to ensure quality in online academic delivery.

This research paper presented systematic approach followed to ensure effectiveness of online academic delivery. The paper presented various efforts initiated at faculty-level, department-level and Institute-level to achieve the same. IPL-2021 competition used to motivate individual faculty members and academic departments for showing their best performance in the online academic delivery.

This work also established quality parameters for measuring performance of online academic delivery for individual faculty members and academic departments. IPL-2021 evaluations done using the identified parameters. In evaluations of IPL-2021 competition it is observed that almost all faculty scored more than 70% which is a good achievement. It is also observed that nearly 80% faculty members used various tools like Slido, Kahoot, Socrates, etc. for interactions with students during classroom delivery. IPL-2021 part 2 results also demonstrate that all academic departments performed exceedingly well during the pandemic period. Further, many IPL faculty participants

presented their papers in various engineering pedagogical conferences. Overall, this initiative has contributed in implementation of joyful learning experience in the online academic delivery.

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