

# **On How IIT Bhubaneswar was run in Digital Mode during the Pandemic**

Prof R V Raja Kumar

The announcement and the swift follow up actions from the central government for establishing a Digital University with the objective of providing quality universal education with personalized learning accessible across the country, have drawn the attention of all involved towards the matter of its realization. In this context, the author wishes, to share the details of the unique and innovative academic system creations that were applied for the functioning of IIT Bhubaneswar in digital mode during the pandemic, through this article.

**The Challenge Posed by the Pandemic:** In March 2020 the sudden onset of the Covid-19 pandemic threw education out of gear and the institute was forced to close down operations sending students to their respective homes.

The big challenge faced was continuation of education in usual and uncompromised standards with the students distributed across the country. Timely graduation of the final year students, i.e., latest by July 2020, completion of academics for the year for the rest, carry on admissions for 2020-21, and to save the academic year for students keeping the academic calendar as closely as possible to usual, were the specific requirements. Also the nation expects leadership and pioneering functioning from the premier institutions.

## **Innovative Digital Mode of Functioning:**

Having realized that switching to digital mode of functioning is the only way to meet the challenge posed by Covid-19, the institute quickly created the required digital processes very innovatively and proactively in advance and switched to digital mode fully on 18<sup>th</sup> March 2020. The director of the institute himself led the development of the digital process by providing the conceptual design and guidance. The following innovative digital practices were developed and successfully applied to run IIT Bhubaneswar:

- i) Three basic variants of online lecturing and live streaming methods involving laptop/tab/white board/cell phone using MS team sessions with the interactive participation of students, were created, the faculty members were trained in advance and switched to live streaming mode of lecturing very successfully on 18<sup>th</sup> March 2020 with Zero gap. The teachers were encouraged to further innovate and do personalized enhancements for interaction and effectiveness to emulate physical mode experience.

- ii) For a strong and uncompromised laboratory practice, hybrid mode was adopted, first partially conducting classes as per the time table by streaming of the live demonstration of the experiments by faculty members to the students with interaction and secondly the hands-on part done with the physical participation of students after their return to the campus after the 1<sup>st</sup> and 2<sup>nd</sup> waves of Covid.
- iii) A very innovative method of conducting pen and paper comprehensive examinations (not multiple choice type) with virtual invigilation by faculty online over the Internet, the first of its kind across the globe (there is no commercial product available) to our knowledge, was developed, applied the same and conducted all examinations successfully so far, since March 2020 without compromising on the examination standards. All the pass outs of 2020 and 2021 were graduated with full examinations conducted. An empowered Help desk was used to handle the bandwidth and device access difficulties of students and ensure fairness. The faculty and students were trained through mock tests conducted in April 2020.
- iv) A digital and hybrid convocation mechanism with live and synchronized participation of students remotely located across the country by a novel scheduling mechanism and multiple sessions and organized the convocations of 2020 and 2021 which was unique across the globe. It involves live participation of a remote student and not a pre-created animation or video clipping.
- v) The extra academic activities (EAA) of Yoga, NSS, sports, and physical training which are an integral part of the BTech curriculum were conducted innovatively through interactive live sessions, almost at par with the usual standards, right from July 2020.
- vi) The online comprehensive examination method created in-house was used for conducting the written test part followed by online interviews for selections for PhD and MTech admissions. Registration of the students was done online for on-boarding.
- vii) Special interactive and feedback sessions were conducted beyond the academics to engage the freshers who have not yet joined the campus to give an experience of belongingness. Orientation sessions and cultural programmes with the participation of the students were also conducted online for giving the virtual campus experience. Virtual class room experience could be provided by creating WhatsApp and email groups of students, faculty advisors and class teachers.

- viii) Internships for students of other institutes at IIT Bhubaneswar and own students at other organizations, seminars, project work, viva-voce, placements etc., were done online.

The above operations of IIT Bhubaneswar could be realized accurately and reliably in an unparalleled way right from March 2020 till recently. Education could be run like in normal times at usual IIT standards, except for some loss of effectiveness in teaching-learning, peer learning, experience of campus, due to physical absence. All the stake-holders expressed happiness with the education. The institute did n't have to change any of its regulations on the pandemic account. Academics could be run as per the normal academic calendars for 2019-20, 2020-21 and 2021-22 except for very minor deviations caused by uncertainties due to the 2<sup>nd</sup> and 3<sup>rd</sup> waves of Covid. **Perhaps this is the first ever successful Digital University creation in full form, in the country.**

Due to advantages such as personalization and quality of education, a well implemented digital university may be more beneficial than a typical open university or even a regular university where there are quality and attendance concerns. On providing access to education, a digital university can offer unlimited seats as emphasized by hon'ble Prime minister, help democratization, be a one stop solution for inclusivity and may be unparalleled.