

Annual Quality Assurance Report (2019-20):

Tata Institute of Fundamental Research, (Deemed-to-be-University)

Two Best Practices by the Institute

Best Practice 1: A Comprehensive Database for Academic Activities

1. Title of the Practice

A Comprehensive Database for Academic Activities

2. Objectives of the Practice

Faculty members are repeatedly asked to provide information throughout the year about our academic activities for different purposes, e.g. CVs, Department/ Centre reviews, DAE reports, Annual Reports, APARs, etc. and also for the NAAC reports. A lot of this information is repetitive but it is difficult to organize for an individual faculty member and time-consuming to collate.

To make it easier to source data for these different reports, a comprehensive database of all our academic activities has now been created by TIFR's in-house development team, ISDG (Information Systems Development Group).

3. The Context or challenging issues

A set of 21 different "screens" was designed that covers all the different types of data needed: Academic Visits

Administrative and Committee Work

Awards

Distinctions

Grants

Fellowships

Conferences attended/Talks/Presentations

Courses taught

Events Organized

Graduate Theses guided

Ongoing developmental work

Outreach/Extension activities

Patents

Publications

Research Items

Short-term projects guided

Visitors hosted

Any other information

My Degrees acquired

My profile information
My collaborators

The fields for entering information are a collation of the various types of data required by different reports. Any entry in any field can be sourced to construct multiple reports specifying the date-range required.

4. The Practice

To our knowledge, no other University or Institution has such a system. The data is comprehensive and covers all the information normally included in one's CV and additional information such as funding, websites and links to activities etc. The work took approximately 2 years, the last 6 months of which was intense, requiring weekly discussions of approx. 4 hours with the development team, after which the ISDG worked all week. At the end of the 6 months, a team of approximately 30 faculty members from all the Centers/Campuses of TIFR (Mumbai, Pune, Bangalore, Hyderabad) did a month of beta-testing and entered feedback about any glitches or improvements. Approximately 100 such feedback entries were discussed individually and addressed. The pilot version of the database was launched in July 2020 and the final version was launched on September 7th, 2020.

5. Evidence of Success

The utility of the database will prove itself in the upcoming AQAR submission, each faculty member's APAR reports, and multiple other reports.

6. Problems Encountered and Resources Required

The main problem anticipated is to get the community of approximately 250 faculty members to agree to enter their backlogged data (2016 onwards, necessary for the NAAC SSR). Once this hurdle is past, we are confident that everyone will see the utility and ease of sourcing reports that are otherwise very time-consuming to generate.

Resources required will be mostly maintenance work (ISDG is well able to do this) and storage space (not a problem for TIFR).

7. Notes (Optional)

Such a database would be of value nationwide. If the UGC adopts such a practice and allows all colleges to use it, no-one would have to struggle with reports and the person-hours saved would be enormous.

Best Practice 2: Setting up by TIFR of nationwide entrance examination (JGEEBILS) considered as National Eligibility Tests (NETs) by Gol

1. Title of the Practice

Setting up by TIFR of nationwide entrance examination (JGEEBILS) considered as National Eligibility Tests (NETs) by Gol

2. Objectives of the Practice

JGEEBILS: The Joint Graduate Entrance Examination in Biology and Integrated Life Sciences was set up in 2012 with the objective of streamlining graduate admissions to research programmes across India with a focus on the life sciences. As an outcome, students who are applying to these programmes would only need to qualify a single entrance test to be considered for admissions across dozens of participating institutions.

3. The Context or challenging issues:

Two major challenges are (a) ensuring a secure high-quality entrance examinations which can be conducted at pan-India centres annually and (b) obtaining support from multiple partner institutions across India who will agree to use the examination as a standard part of their admissions procedures. These challenges arise from the examinations being at a national scale.

4. The Practice

JGEEBILS: This examination is now recognized by 20+ of the most prestigious life sciences research institutions across India, including TIFR, IISERs, CCMB, NII, NBRC, etc. This makes JGEEBILS unique among all comparable NETs conducted annually in India. Each year approximately 10,000 candidates apply to write the JGEEBILS examination. The exam has a unique format which is difficult to “crack”, because it has multiple sections across disciplines (General, Physics, Chemistry, Biology) and moreover the questions are conceptual rather than memorization-type questions. The key limitation is to organize appropriate exam venues at 25+ locations across the country, making it convenient for all students to attend and sit for the exam. In recent times, to increase security and efficiency, the exam has moved to an online-only system. This new system will be suitable for scaling up numbers of candidates and partner institutions, while at the same time ensuring student safety in a post-Covid environment.

5. Evidence of Success

JGEEBILS: From a few partner institutions at the initial stage, JGEEBILS now has 20+ institutions as participating institutions (with many others who have applied to be partners whose applications are being considered). In parallel, the number of students applying to sit for the exam has reached about 10,000 annually. The gender ratio of students is evenly balanced. Students have secured admission to PhD programmes across the country, including at TIFR, based on their JGEEBILS scores.

6. Problems Encountered and Resources Required

JGEEBILS: The key problem when the examination was conducted physically was to ensure timely preparation of the questions from a secure question bank, and to ensure secure printing and distribution of the question papers and then the secure collection and grading of answer sheets and distribution of scores to all partner institutions. This required active participation of TIFR faculty at each step of the process. The new online-only examination has removed many of these constraints.

7. Notes (Optional)

None