

## JADAVPUR UNIVERSITY

A brief update on the implementation of the Toolkit developed under EQUAM-BI

17March 2021

Note:

- a. This brief report is being prepared after online meetings with EQUAM-BI partner institutions, the University of Barcelona (represented by Agustina Calabrese Gomez and Jaume Fortuny) on 26 February 2021, and La Sapienza University of Rome (represented by Shirin Zakeri) on 12 March 2021.
- b. This report needs to be read in conjunction with the filled-in template for implementation of the Toolkit, already submitted to EQUAM-BI by Jadavpur University in February 2020.

### *The Report*

1. This brief report is necessarily incomplete, and inadequate, because Jadavpur University (like all educational institutions across the world) has been very badly hit by the ongoing Covid-19 pandemic. The university has been functioning with a skeleton staff, with massive disruption of all regular university activities (conducting classes and research; holding examinations; conducting meetings of statutory and other bodies; and so on and so forth) since mid-March 2020. Regular in-person classes have still not commenced and research activities continue to be hampered as on date.

2. Perhaps the biggest challenge thrown up by the pandemic has to do with the fact that a significant percentage of the university's students come from economically challenged backgrounds, without adequate access to digital resources (devices, data); such students have been hardest hit as a result of the pandemic. Although the university has taken some measures to mitigate their problems (providing smartphones, data plans to several hundred students), the university does not have the resources to do this to the extent needed. Smartphones were purchased through funds raised from faculty and alumni donations. (See: <https://www.hindustantimes.com/education/jadavpur-university-to-provide-handset-data-pack-to-students-not-having-smartphones/story-WVTKzVk7rWYjyYmjnwsb6O.html>; <https://www.telegraphindia.com/west-bengal/calcutta/smartphone-data-pack-for-800-jadavpur-university-students-for-online-classes/cid/1789308>; <https://www.telegraphindia.com/west-bengal/calcutta/jadavpur-university-hands-smartphones-to-students/cid/1794720>; <https://www.livemint.com/education/news/jadavpur-university-to-provide-smartphones-data-pack-to-students-11600042930749.html>; [1](http://www.millenniumpost.in/kolkata/jadavpur-university-to-</a></p></div><div data-bbox=)

[provide-handset-data-pack-to-students-not-having-smartphones-418148](#) for a few newspaper reports regarding this.)

3. The pandemic has taken a heavy toll, but if we look at a slightly longer time-frame, three important things have changed with respect to quality assurance and benchmarking processes in the last few years.

(i) *Participation in international rankings* (QS, Times Higher Education), in which the university has performed quite well (Times Higher Education Rankings 2020: ranked in the 601-800 band among all Engineering & Technology institutions in the world, 144th among Asian universities; QS World University Rankings 2020: highest ranked State University in the country, with an Asian rank of 136).

(ii) *Greater international collaboration*, especially in research (and also in teaching). Over fifty MOUs (Memoranda of Understanding) have been signed in the last five years; successful implementation of prestigious academic programmes (UPE, TEQIP, DST-PURSE, EU Projects, UKIERI, SYLFF, Erasmus Mundus, UN supported Global Change Programme) have taken place; among others.

(iii) *Greater recognition of research*, especially at the international level (As many as thirty faculty members from the University are in the list of the top 2% of the world's scientists, prepared by Stanford University (2020), the highest among Indian universities).

4. No administrative action at the university level regarding the implementation of the Toolkit or other measures for quality improvement can be contemplated until there is some clarity regarding the probable course the Covid-19 pandemic, and especially its likely effects on higher education in general and Jadavpur University (JU) in particular. Vice-Chancellor Professor Suranjan Das has stated that, in his opinion, whatever is to be done should be done after due consultation with, and assent from, stakeholders and statutory bodies, especially the Executive Committee of the University. It is to be noted that any change in the University's functioning is dependent on assent from the State Government, since JU is a State University. However, and even if these changes cannot be implemented before the closure of the EQUAM-BI project, three areas that need to be address are:

(i) More integration and collaboration of research activities, especially those with an international component.

(ii) Greater collaboration with partner institutions in India, including learning from their experiences, and best practices.

(iii) Better data gathering, management, and implementation both for internal and external purposes.

5. The full effect of the pandemic is yet to make itself felt; and its effects on higher education are still by no means clear. Moreover, the National Education Policy 2020 (NEP 2020) envisages fundamental changes in the structure and functioning of the entire education sector in India, including higher education. Taken together, these two factors (the pandemic and its aftereffects, and the NEP 2020) may well lead to radical shifts in the way in which education is envisaged, implemented, and functions in Indian society in the years to come. Although the Toolkit provides useful guidelines whereby to look at quality assurance and benchmarking processes, it was neither designed for a situation of global crisis, nor can it be expected to foretell how things will change (and necessitate a rethink and relook at what constitutes “quality” or “equity” or “benchmarking”) in the near future.

6. Once normal, or near-normal, operations resume, and all teachers and non-teaching staff (including officers and administrators) start coming in to work on regular basis, the usefulness of the Toolkit can be demonstrated with discussion sessions and workshops to encourage the adoption of practices envisaged in, or inspired by, the Toolkit. Apart from conducting dissemination workshops within the university, it is also possible to think of a press meet or conference where the valuable suggestions for quality improvement and benchmarking that have emerged as a result of the EQUAM-BI project could be highlighted. This can still be done at a more local level, once things start returning to normal.

7. Measures taken during the pandemic include the following:

- (i) Revamping the university website – a process that is still underway, and where inputs have been made on the basis of the Toolkit.
- (ii) Since classes are being held online, individual teachers and departments/schools have created repositories of study material, recorded lectures (audio and video), and other material which will be useful in future for both online and offline classes.
- (iii) Where laboratory-based classes are concerned (especially in the Science and Engineering & Technology faculties), videos have been created by teacher and research scholars.
- (iv) There is now a much greater use of digital resources, including those not created within JU.

(v) It has become possible for students to benefit from teachers from other universities, both in India and abroad through online lectures, discussions, conferences, and seminars. Many of these have been uploaded on platforms like YouTube for future access.

(vi) There has also been greater participation of students and teachers in such online sessions – workshops, seminars/conferences, lectures – and there has definitely been exposure to a wider range of scholars from diverse institutions on part of students.

(vii) The regular teaching-learning process has become more collaborative, with students and teachers joining hands to create, locate, and share digital resources.

(viii) Many administrative tasks are now being done online, or through a mix of online and offline modes.

(ix) Research activities, though hampered, are still continuing. Please see the Appendix for some recent research outcomes that have received public recognition.

8. A vital component of JU's quest for excellence has been the Government of India's World Bank-assisted TEQIP (Technical Education Quality Improvement Programme), which has been operational in the Faculty of Engineering & Technology at Jadavpur University (FET-JU) since 2003. The broad objectives of that phase of the programme as defined officially by the Government of India were as follows:

- To create an environment in which Engineering Institutions selected under the programme can achieve their own set of targets for excellence and sustain the same with autonomy and accountability.
- To support development plans including synergistic Networking and Services to Community and economy of competitively selected institutions for achieving higher standards.
- To improve efficiency and effectiveness of the technical education management system in the States and institutions selected under the Programme.

TEQIP Phase I was completed in 2012, and Phase II in 2017. Under Phase-III of TEQIP (2017-2021), the programme has been fully integrated with the Government of India's Twelfth Five-Year Plan objectives for technical education as a key component for improving the quality of engineering education in existing institutions with a special consideration for low income states (LIS) and special category states (SCS) and support to strengthen affiliated technical universities to improve their policy, academic and management practices. Stress has been laid to improve quality and equity in engineering institutions in focus states including seven Low Income States (LIS), eight states in the North-East of India, three Hill states in Himachal Pradesh, Jammu,

Kashmir, Uttarakhand and Andaman and Nicobar Islands. Only Government or Government-aided institutes are funded in this phase. There are ‘mentor-mentee twinning’ partnerships between institutions in focus states (as mentees) and institutes with proven credentials during earlier phases (as mentors).

After successfully completing Phase I and II, FET-JU is now working as the mentor institute for two mentee institutes, one from the North-West and another from the North-East of the country. Till date all the performance audits of TEQIP-I, II and III of FET-JU reported excellent performance with fulfilment of most of the defined targets. (A more detailed report on TEQIP activities is given as Appendix 2 to this report.)

9. It has to be admitted that despite all of the above, there is a sense within the larger JU community, that physical classes, research, and other activities need to be resumed soon. The regular physical interaction that is the lifeblood of any educational institution cannot be indefinitely substituted with online modes of teaching-learning. Such pre-pandemic modes of interaction are also necessary if the suggestions and action points of the Toolkit are to be discussed and implemented on the ground.

## Appendix 1

### *Some recent research outcomes at Jadavpur University*

#### 1. The 1st Online Bangla Historical Dictionary

*For the first time in any Indian Language, a Historical Dictionary of Bengali Language named 'Shabdakalpa' is being developed by Jadavpur University School of Cultural Text and Records.*

**URL:** <https://www.collegedekho.com/news/jadavpur-university-first-online-bangla-historical-dictionary-17406/>

#### 2. An archive on changing Durga Puja

<https://timesofindia.indiatimes.com/city/kolkata/ju-archive-on-pujas-glamtransformation/articleshow/71657266.cms>

#### 3. Using Facebook as a historical resource

<https://www.anandabazar.com/state/jadavpur-university-is-trying-to-recover-the-stories-of-old-kolkata-from-a-facebook-group-1.1060789>

#### 4. The Innovation Hub under the RUSA has recently made the following breakthroughs, particularly significant in view of the ongoing pandemic:

##### *(i) Development of a device to tell if a coughing person is a Covid-19 carrier*

*Two students of Jadavpur University have developed an intelligent device which will analyse if a coughing person is a COVID-19 carrier. The details of the model have been submitted to the ICMR.*

**https://economictimes.indiatimes.com/news/science/jadavpur-university-students-develop-device-which-can-tell-if-a-coughing-person-is-a-covid-19-carrier/articleshow/75442327.cms**

##### *(ii) Developing an app to disseminate genuine info on Covid-19*

*The 'infobank' will contain all verifiable and accurate information on the disease.*

**URL:** <https://www.hindustantimes.com/education/jadavpur-university-students-developing-app-to-disseminate-genuine-info-on-covid-19/story-m89QFLcmH9Vxp4XR3KpbEI.html>

##### *(iii) Design for low-cost ventilator*

*Jadavpur University duo win hackathon for coronavirus solution*

<https://www.telegraphindia.com/calcutta/ju-duo-win-hackathon-for-coronavirus-solution/cid/1763908>

##### *(iv) Developing low-cost three-layer mask to fight Covid-19*

<https://timesofindia.indiatimes.com/city/kolkata/jadavpur-university-to-develop-affordable-3-layer-masks/articleshow/75002129.cms>

These masks are being distributed amongst the needy; the West Bengal Government has also indicated an interest to purchase a bulk quantity of such masks

##### *(v) Development of software (MOXA) to detect persons in the street without mask. The system is likely to be very useful if we can install the software on the CCTVs installed in the streets.*

Jadavpur University is in touch with the Kolkata Police HQ to use this software for the development of proper equipment.

## *Appendix 2*

### *The World Bank-assisted Technical Education Quality Improvement Programme (TEQIP) of the Government of India and the role of the Faculty of Engineering and Technology, Jadavpur University (FET-JU)*

Before Independence, the Indian education system was geared primarily towards training for some basic arithmetic and English language skills to work for the British rulers. However, after Independence, India concentrated much more on quality technical education for building infrastructure in the independent nation. Since then Indian technical education has achieved a great height with international recognition for many institutes. Since the last few decades, privately-funded technical institutes of international repute are also emerging. Jadavpur University was born from the National Council of Education of Bengal (NCE-Bengal) which was conceived and developed with a mission to educate students for Indian needs rather than those of the foreign rulers. Technical education was also an important part of that mission of the NCE-Bengal. Thus, the Faculty of Engineering and Technology of Jadavpur University (FET-JU) has a great heritage of technical education from a time even before Independence. Currently, the FET-JU is the largest faculty of the University with the largest number of faculty members and students out of all four faculties.

The Government of India with the financial assistance of the World Bank adopted a mission programme, the 'Technical Education Quality Improvement Programme' (TEQIP) consisting of different phases to improve the quality of technical education at the national level. The overall objective of this programme was to competitively select institutes with their self-defined targets and help them to achieve those targets through different actions and reforms under their own leadership with funding support from the Government and academic support by a few leading institutes of India. Clusters of Institutes were formed to achieve their defined goals with both financial and academic support within the clusters but under constant monitoring of their performance improvement as defined in their Institutional Development Plan (IDP).

In phase one of this programme (TEQIP-I; 2003), Government-funded, Government-aided, and private institutions engaged in conducting degree, postgraduate, and doctoral programmes in engineering disciplines were included. The term institution here included stand-alone colleges, deemed universities (technological), universities (technological), and constituent colleges, departments and faculties of universities. The main focus of this phase was to develop

infrastructure and academic excellence of undergraduate engineering education within the cluster for faculty, staff, and student development. Adopting reforms within the institutes towards full autonomy was an important goal of this phase, too.

The second phase (TEQIP-II; 2012-2017) boosted efforts to prepare more post-graduate students to reduce the countrywide shortage of qualified faculty, and to produce more research and development (R&D) in collaboration with industry. The principal goal of this phase was to scale-up and improve quality of technical education and enhance existing capacities of the institutions to become dynamic, demand driven, quality conscious, efficient and forward looking, responsive to rapid economic and technological developments occurring both at national and international levels. The broad objectives of this phase of the programme as defined officially by the Government were as follows:

- To create an environment in which engineering institutions selected under the programme can achieve their own set of targets for excellence and sustain the same with autonomy and accountability.
- To support development plans including synergistic networking and services to community and economy of competitively-selected institutions for achieving higher standards.
- To improve efficiency and effectiveness of the technical education management system in the States and institutions selected under the programme.

Under Phase-III (TEQIP-III; 2017-2021), the programme has been fully integrated with the 12<sup>th</sup> Five-Year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions with a special consideration for Low Income States (LIS) and Special Category States (SCS) and support to strengthen a few affiliated technical universities to improve their policy, academic and management practices. Improving quality and equity in engineering institutions in focus states viz. seven Low Income States (LIS), eight states in the North-East of India, three Hill states viz. Himachal Pradesh, Jammu & Kashmir, Uttarakhand and Andaman and Nicobar Islands (a union territory (UT)). Only Government or Government-aided institutes are funded in this phase. There are 'mentor-mentee twinning' partnerships between institutes of focus states (as mentees) and institutes with proven credentials as evaluated during earlier phases.

Under each phase of the TEQIP, selected engineering institutes were invited to submit their own development goals within the larger objectives of each phase of TEQIP through their own Institutional Development Plan (IDP) developed by the respective institutes and submitted well before the project commencement. Absolute freedom to institutions was given to develop



their own institutional development plans and to determine their own path to excellence. Then a rigorous and robust evaluation process was carried out by the National Project Implementation Unit (NPIU) for these submitted IDPs before selecting institutes to participate in TEQIP, both with respect to their then status and rationality and practicability of their defined goals to be achieved during the project period. Subsequently, necessary support to achieve these goals were provided by the NPIU. Finally, institutes were assisted through a system of periodic auditing and mentoring of project institutions during the project cycle, followed by assessment of the impact/success by independent external experts at the end of the project both at institutional and national levels.

During TEQIP-I (2003-2009) major thrusts were on: institutional reforms towards academic excellence; modifying institutional governance for better autonomy with participation of most of the stakeholders; achieving academic excellence with proper benchmarking; development through networking both within the project institutes of the country and leading institutes of the world; providing services to local communities for better socio-economic development and, finally, catering to the overall satisfaction of all the stakeholders. FET-JU had well-defined goals for each of these given targets. A total of about 160 million Indian Rupees (INR) were used to procure different instruments and other infrastructural requirements. Overall utilization during this phase was INR 230 million. Several faculty members, students, officers and other staff members were supported for networking (both national and international), to participate in training programmes, joint R&D activities, etc. Apart from several other activities under community services to the society, JU initiated and is still continuing with a community radio station (Radio JU; 90.8 Hz) for dissemination of useful knowledge and information to the local community. In final evaluation of impacts of TEQIP-I by independent experts, FET-JU was assessed as belonging to the “highly satisfactory” category, specifically for flexibility of learning, credit exemption, multi-background admission, offering electives, continuous evaluation, grading system, community services, etc.

TEQIP-II (during 2012-2017) continued with the development of infrastructure and international collaborations for academic excellence, specifically for post graduate (PG) education and research. Five new PG courses, including a few multi-disciplinary ones, were introduced during this phase. Total project value at this phase was INR 175 million. In addition, a Centre of Excellence (CoE) was also approved through national level competitive evaluation. Additional funding of INR 50 million was provided for the growth of this centre. Assessment of most of the key performance parameters of Phase II was also satisfactory. However, some

metrics were identified as moderately satisfactory, including for industry collaboration, regular recruitment of faculty members, etc.

On the basis of the university's performance during TEQIP-I and TEQIP-II, for TEQIP-III (during 2017-2021) FET-JU was assigned the additional responsibility of overall academic mentoring of two institutes (one from the state of Rajasthan and another from Tripura). A total financial support of INR 70 million was provided at this phase. An additional funding of INR 40 million has also been provided for the already established CoE. The final assessment result of Phase-III is still pending. However, in the two interim evaluations of TEQIP-III, FET-JU scored the highest for mentoring twinning institutes which is the major focus during this stage.

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