

Development Radars: An Innovative Approach to Incentive Based and Performance Linked Funding of Universities

The University Grants Commission (UGC) is entrusted with the responsibility of determining and maintaining the standards of higher education and for that purpose allocate resources to the institutions of higher education in the country. To this end the UGC has been assessing the development needs of central, state and deemed universities, university level institutions, inter-university centres and colleges, during each of the Five Year Plans and has been sanctioning development assistance to the eligible institutions so as to ensure balanced growth and development of higher education in the country. For the purpose of assessing the development needs, the UGC has been:

- Developing detailed guidelines for inviting development proposals from eligible Universities
- Sending Expert Committees to each of the Universities to validate their claim and recommend appropriate level of development assistance. The Expert Committees were also entrusted with the responsibility of suggesting ways and means of further improvement in teaching, research and extension activities of these institutions
- Undertaking Mid-term review of the performance of universities in terms of goal achievements and utilization of the sanctioned plan grants

Plans after Plan, such committees have been visiting the universities and recommending magnitude of development assistance and also the areas that needed attention of the universities and the UGC. However, there have always been felt a need of mechanism that the universities could themselves identify their strengths and weaknesses and thus become performance-oriented rather than expenditure-oriented. To give effect to the idea, the UGC resolved that the one-third allocations of the 9th Plan Grants to the Universities should be based on the performance of universities as assessed in the mid-term review. Also, it was announced that the 10th Plan allocations to the universities should be based on their development performance during the 9th Plan. But this required developing transparent, objective, non-discretionary and quantifiable performance parameters, which has so far been conspicuous by their absence. The gist of the concepts and actions are given below, however the detailed document on Development Radars is expected to be brought out shortly.

The Genesis :

The genesis of the project began with a vision to evaluate the development performance, a need was felt to develop objective and quantifiable indicators to reflect on the all round performance and development of the universities. It was, therefore, proposed to work out University Development Profile for each of the universities eligible to receive development assistance from the UGC so as to assess their status of development in Teaching, Research and Governance parameters so as to ascertain the strength and weaknesses of each of the respective universities. This was intended to enable the UGC to identify areas that needed focussed attention. To this effect, it was desired that the UGC should take the initiative of:

- Developing University Development Profile for each of the eligible institutions so as to reflect on the following three important performance parameters
 - a. Academic Performance
 - b. Research Performance
 - c. Governance Performance
- Reflect the development profile visually and for that purpose develop **Development Radars**
- Identify and list various parameters which could be used for evaluating academic, research and governance parameters and also the methodology to map them on **Development Radars**

The Idea of Development Radars:

The idea of computing performance scores of universities and plotting them on Development Radars was originally mooted by Professor Arun Nigavekar, Chairman of the UGC, which was appreciated by the committee constituted to perfect the methodology.

The Concept of Development Radars:

The Development Radars, in the context of higher education and universities in particular, may be described as diagrammatic representation of progress of universities in terms of their (a) Academic, (2) Research and (3) Governance functions. As discussed earlier and demonstrated in Annexure 1, each of the above three parameters have been computed based on a number of performance indicators, for which actual values have been plotted vis-à-vis benchmarks on a scale of 0 to 10. These benchmarks or norms, in case of some indicators are self-defining and self-selecting but in some other cases an element of value judgement have been used to define the benchmark.

The development radars give a snapshot view of the structure, the pace and the gaps in the development of each universities between two points of time Presently, these covers the

beginning (1997) and the end (2002) of the 9th Plan period. They capture the relative contribution of different performance indicators in overall development of each of the universities.

While interpreting the development radars, it must be kept in mind that the ratio of covered area with the total radar area reflects on the status of development of individual universities with respect to each of the performance parameters as well as on each of the performance indicators. The covered areas in the main document are shown as shaded, which depicts that:

1. Greater the shaded area of any indicator, the better is the attainment on that indicator.
2. Similarly, the more symmetrical the shaded portion of the radar, the more balanced is the attainment on different performance indicators of university development.
3. At the same time, the more is the shaded area corresponding to the year of reference vis-à-vis the base year, the faster is the pace of university development for a particular performance parameter during the intervening period.
4. Finally, larger the gap between the periphery of the radar, which basically represent the benchmark, and the shaded area around the centre, the larger are the gaps on performance attainments of each indicators
5. Thus larger is the distance that the concerned university needs to cover in order to achieve the desired level of performance attainments on the respective indicators.

Since the methodology is quite innovative and has only sporadically been tried and tested in India and that too in sectors other than education, it appears worthwhile to give an overview of the approach and methodology. Needles to mention that the methodology may be further improved upon with the passage of time as the same is perfected.

The Major Concerns:

1. Development of Performance Parameters: It should be done such that each parameter be defined with out any ambiguity and multiple interpretation of data could be avoided.
2. Development of Benchmarks: The benchmark for each development indicator needed to be worked out based on the ground realities of individual universities so as to reflect the picture with reference to present environment and thus giving first level advantage to individual universities. This was considered particularly important in view of the fact that different universities are at different levels of development and that their performance achievements is influenced by such factors as their location, age, constitution etc. However, while doing so the objectivity must be the guiding factors and the scope of subjectivity and discretion needed to be consciously avoided
3. Collection of Data and Its Validation: The time of reference for developing the radars was taken as between the beginning and end of the 9th Plan period. The detailed

questionnaire sought to collect the required information for these two points of time from the universities themselves and the Visiting Committees were mandated to verify the data so provided. In order to ensure that the data is not fudged and that the universities inculcate the habit of compiling and collating the performance parameter data, each university may consider setting up a cell.

4. Computation of actual performance: The major concerns have been the methodology and accuracy in the computation of actual performance value for each of the universities. To this end, the formula and variables used in the formula were checked, counter-checked and shared with each of the eligible universities in the country. Suggestions made by different universities were duly considered and if found necessary, were incorporated in the final computation.
5. Plotting of Performance Scores on Radars: The actual value of each of the development indicators achieved by the universities were plotted vis-à-vis the benchmarks on the three development radars. The area covered by the individual radars reflected the development of the university in the particular performance parameters.

The Committee:

To work out the details and to arrive at an effective methodology, the University Grants Commission constituted a high-powered Committee under the chairmanship of Professor Arun Nigavekar, Chairman of the UGC:

The Committee had a series of meetings under the chairmanship of Professor Arun Nigavekar, Chairman of the UGC and deliberated upon the various issues involved in developing the Development Radars including identification of performance parameters, benchmarking, value-judgement, data collection, data validation and mapping and plotting the data on Development Radars. It was through this process that:

1. A detailed questionnaire was drafted and sent to each of the eligible universities together with the Guidelines for Development Assistance in 10th Plan.
2. Comprehensive methodology was developed to measure and plot performance scores of individual universities in terms of their development achievements with respect to Academic, Research and Governance
3. The Visiting Committees of the 10th Plan were requested and mandated to verify the data provided by the respective universities so as to ensure the accuracy of information and reliability of Development Radars and Performance Scores.

4. The verified data were electronically processed and plotted on three distinctive development radars namely the Academic, Research and Governance for each of the central, state and deemed universities.
5. The data interpretation, entry, computation and plotting were then crossed checked.
6. The Universities were sent the copies of their performance scores together with the development radars with the request to verify the data, methodology and computations and comments received from them were verified and duly incorporated in their development radars.

The Main Volume:

The main volume covers the Academic, Research and Governance Radars of each of the Universities together with their Performance Scores on each of the three performance parameters. This makes a beginning of an objective, incentive based and performance linked funding mechanism of higher education in the country.

The Volume shall present the performance scores and associated development radars on Academic, Research and Governance Parameters for each of the eligible Central, State and Deemed Universities of the country. These include the following:

An Analytical Overview of Development Performance of Universities in India:

It may be mentioned at the outset that all of the University level institutions are not eligible to receive development assistance from the UGC. These largely include the agricultural universities, technological universities and medical universities. Similarly, there are large numbers of deemed universities, which are not entitled to receive any development grants from the UGC. The development radars included in the volume would thus reflect only those of the central, state and deemed universities which are entitled to receive development assistance from the UGC and have provided the required data for the radars.

Table 1: focuses on the size of the survey. The Universities have been evaluated using tri-pronged approach I.e. Academic, Research, Governance Performance. The parameters use these 3 approach are given in Annexure 1:

Table 1: Number of University Level Institutions Covered			
Type of Institutions	Total Number of Institutions	Number Eligible to Receive UGC Grants	Data Received for Radars
Central University	16	15	14
Deemed University	64	26	26
State University	166	110	104
Total	246	151	144

Academic Performance:

Table 2: Academic Performance of University Level Institutions			
	Performance Score		
Type	Maximum	Minimum	Average
Central University	81.84	21.94	59.60
Deemed University	92.13	31.87	61.90
State University	94.05	13.19	62.38
Average of All Institutions	94.05	13.19	62.03

Research Performance:

Table 3: Research Performance of University Level Institutions			
	Performance Score		
Type	Maximum	Minimum	Average
Central University	90.27	9.09	51.01
Deemed University	90.72	26.62	53.20
State University	87.37	14.84	57.09
Average of All Institutions	90.72	9.09	55.80

Governance Performance:

Table 4: Governance Performance of University Level Institutions			
	Performance Score		
Type	Maximum	Minimum	Average
Central University	93.88	41.36	74.97
Deemed University	98.04	56.14	79.67
State University	96.89	30.00	77.08
Average of All Institutions	98.04	30.00	77.34

Overall Performance

Table 5: Overall Performance of University Level Institutions			
	Performance Score		
Type	Maximum	Minimum	Average

Central University	87.75	38.50	61.86
Deemed University	93.63	46.11	64.92
State University	88.21	21.34	65.52
Average of All Institutions	93.63	21.34	65.05

Annexure 1

Proforma for Making University Development Radars

Performance Parameters Used for Developing Development Radars

Radar 1: Academic Performance			
Sr No.	Indicators	Formula for Computation	Benchmark value
A	Frequency of syllabus revision	No. of subjects in which major syllabus revision was done in IX Plan / No. of subjects that are being taught	100%
B	Average number of working hours of the Library	No. of hours the Library is open / total no. of hours in a year	60%
C	Percentage of Teachers having Ph.D.	No. of teachers having Ph.D. / Total No. of teachers	100%
E	Average no. of activities like workshop/seminar/symposia/conferences conducted per year	No. of workshops / seminars/ conferences conducted in IX Plan /5	50 per year
F	Demand Indicator	Total no. of admissions in all courses during IX plan / total no. of candidates who applied for these exams in IX plan period	1:10
G	New degree programmes(UG & PG) introduced in IX plan	New degree programmes (UG & PG) launched in IX Plan / total No. of programmes	5%
H	Percentage increase of books/journals in IX plan	No. of books and journals purchased during IX Plan / No. of books and journals available in the beginning of IX Plan	5%
I	Utilization of central Library	Total (over 5 year period of X plan) number of visits by students and teachers / number of students and teachers (over 5 years period of IX plan) x 5 years x 180 days*	30%
J	Assessment of teachers by students	No. of courses in which the student assessment has been introduced / total No. of courses	5%

K	Implementation of examination reforms such as Grades/ semester examination/internal evaluation	No. of academic programmes in which the examination reforms have been introduced till now/ total No. of programmes	30%
L	Percentage of NET/SET/GATE qualified candidates	Total (over 5 years period of IX plan) no. of NET/SET/ GATE qualified candidates / total no. of candidates that appeared for NET/SET/ GATE examinations over 5 years period of IX plan	5%
M	No. of Inter-disciplinary programmes launched	No. of Inter-disciplinary programmes introduced during IX Plan/ total No. of programmes	10%
N	NAAC rating	NAAC rating for academic performance	100%

Radar 2: Research Performance			
S No.	Indicators	Formula for Computation	Benchmark value
A	No. of Research Publications per teacher per year	No. of Research Publications / Total No. of teachers * 5	1
B	Research grant received per teacher per year	Total research grant received in IX Plan in Lacs/ No. of teachers * 5	0.5 lacs per teacher per year
C	Research students per teacher per year	Total no. of research students in five years [IX plan] / total faculty [average over five years] * 5	2 per year per teacher
D	Percentage of teachers attending seminars by invitation and giving invited presentation per year	Total no. of teachers that attended seminar [or similar status activity by invitation during IX Plan period/Total number of teachers [average over five years] * 5	5%
E	Percentage of department getting departmental support from various agencies like UGC, SAP, COSIST etc.	Total number of departments who got support in IX plan period/Number of departments	20%
F	Percentage of faculty getting Awards/ Honours	Total No. of Honours/Awards/ Patents won during IX Plan / No. of teachers [average over five years]	1%
G	Citation Index	Citation value of all the research papers published during IX plan period/Total number of research papers published during IX plan period	1 per paper
H	Average time spent on Ph.D.	Total number of full time research scholars [IX plan period]/ Total number of research scholars [average over five years]	4 years (Inverse plotting)

I	Percentage of full time Research Scholars	Total number of Full time Research Scholars during IX plan period/Total number of research students in IX plan period	75%
J	Percentage of research students getting research fellowship	No. of research students getting research fellowship / Total No. of full time research students	80%
K	NAAC rating	NAAC rating with regard to research performance	100%

Radar 3: Governance Performance			
S. No	Indicators	Formula for Computation	Benchmark value
A	Actual Teaching Days Per Year	No. of actual teaching days in the IX Plan /5	180 days
B	Minimum Workload for the teachers	No. of hours the teacher on an average spends in the university in one week/No. of hours as expected under UGC regulation	40 hours / week
C	Teaching/Non Teaching Ratio	Total No. of teachers (average over IX plan period)/ total No. of non-teaching employees (average over IX plan period)	Central & State Univ = 1: 2 Deemed Univ = 1:1
D	Percentage of Teaching Posts Filled Up	Teaching post filled / total No. of teaching posts (average over IX plan period)	100%
E	Regular Meetings of Executive council /Syndicate/Senate/Academic Council/Board of Studies	No. of meetings actually held / No. of meetings required as per Act (average over IX plan period)	100%
F	UGC Regulations - Whether UGC Directions Followed (a) Minimum qualification:	No. of teachers qualified as per UGC regulations / total No. of teachers (average over IX plan period)	100%
G	Specification of degrees	No. of courses offered which are specified by UGC / total No. of courses offered. (Average over IX plan period)	100%
H	Timely Declaration of Result	No. of examinations where the result was declared in time / Total No. of examinations (average over IX plan period)	100%
I	Percentage Utilization of UGC Grants	Total utilized grant [IX plan period] / Total grant received during IX plan period	100%
J	Implementation of Reservation Policy	Total number of reserved category posts of teaching + non teaching and technical cadre posts filled (average over five)/ Total number of reserved category posts [Teaching + non teaching + technical cadre, average over five years]	22.5
K	Resources Generated through External Sources in the IX plan	Resources generated through external sources / total Plan budget of the IX Plan	20
L	Percentage of Departments Collaborating with Other Universities /Institute /Research Laboratories	Total number of such collaborations / Total number of Departments (average over IX plan period)	5%
N	Percentage increase in physical infrastructure in IX Plan	Increase in physical space during IX Plan for Lab, Class Rooms, Hostels, teachers quarters, Library, Common facilities, other buildings etc. / Space in the beginning of IX Plan	5%
O	NAAC Rating	NAAC rating with regard to governance	100%