



## RESEARCH AND PUBLICATION CULTURE OF HIGHER EDUCATION INSTITUTIONS IN ODISHA

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### ABSTRACT

*The objectives of the paper is to analyse research outputs, self financing courses, research initiatives and inclusive education in Odisha. The study highlights on Government investment in in research activities and Researchers who lead them with the expectations that the country benefits in the long term from increased productivity and enhance social development. The total expenditure on higher education by Odisha State government is approximately Rs.1, 200 Crore which represents 0.5% of its Gross State Domestic Product (GSDP). This includes plan and non-plan for revenue and capital expenditure. The state's annual per capita expenditure on higher education for its 18-23-year-old population is about Rs. 2,700 (EY, 2015). Studies have highlighted the value of continuity of sound leadership in enhancing institutional strength. All HEIs have Student Placement Cells but not all are equally functional. Cells are headed on a part-time basis by a member of the faculty who is a full-time teacher of a discipline, fitting in the management of the cell. Skills development, much sought after by employers, was supported by some colleges through well-planned co-curricular activities and processes. Experience with interactive sessions outside the regular classroom environment increases the flexibility and ease with which graduates can adapt to new environments.*

**KEY WORDS:** Culture, Journals, Patents, Publications, Research Policies

### INTRODUCTION

The process of elevating government colleges into autonomous colleges and autonomous colleges into universities has resulted in severe infrastructural stress with crowded facilities and insufficient equipment, libraries and documentation access, and a high-level ICT set-up. Teachers and research scholars sit in dark and dingy rooms. They have no private space in the libraries as well. The physical environment requires modernizing and upgrading if improved performance is expected in teaching, research and publications (Beteille, 2010). Quality tertiary level teaching and learning are characterized by two categories of research: (a) action research activities that feed into programmes and courses, providing a built-in mechanism for review and change; and (b) academic research into basic and applied disciplines or multi-disciplinary areas.

In the first category, the interviews carried out in this study suggest a need for systemic action research to be undertaken in areas such as curriculum revision and examinations. The performance of Boards of Studies (BOS) and their impact on college curricula would be one such key area. Similarly, the NAAC and the UGC have strongly supported the establishment of Quality Assurance Cells, Student Placement Cells, as well as Instrument Units in Science Faculties. Little is known about the performance of these cells/units, if they have met objectives or what changes need to be put in place to improve their functioning. Apart from faculty involvement, it may be a good idea to institute third-party evaluation studies of bodies within institutions and also an overall study of institutions. The staffing pattern in suggests that academic leadership is a major drawback in institutions' research and publication endeavours with only four Professors in the entire state to provide leadership. The absence of such leadership is perhaps part of the explanation for the paucity of outputs seen in Table 6. The data and information gathered in this study show that the research outputs are modest and perspective plans for the next three years are equally modest. The following table gives a snapshot of the current situation state-wide of Universities and Colleges under DoHE and for 2016-2017. It does not include the technical universities and colleges under the Department of Science and Technology or the research institutes.



**Table-1 Current Research Outputs 2013-2014/2016-2017 in DoHEHEIs**

Parameter	2013-14	2016-17
No. of research publications in refereed Indian Journals	640	770
No. of research publications in refereed international journals	226	255
No. of patents	00	00
No. of sponsored research projects completed	85	100

**Source:** State Plan for Higher Education at a Glance, 2014 & 2018.

Contributing to the analysis of institutional productivity and having a strong bearing on research policy, output and knowledge transfers are publications and citations. The target of 60 additional articles in Indian journals, and 29 planned for international journals from 2013-14 to 2016-17 as per the State Higher Education Plan at a Glance, does not paint a positive quality scenario for Odisha. The fact that completion of only 15 additional sponsored research projects is expected in three years is probably a reflection of research funding levels, expertise and the state research infrastructure whole. Over two years five Odisha Universities spent only 1% on research activities and 64% on Salary, Allowance and Retirement Benefits (EY, 2015). The picture from 15 Odisha Colleges is equally grim: with 87.9% expended on Salary, Allowance and Retirement Benefits, the category of Research Activities merited only a negligible 0.3% (EY, *ibid.* Figure 19, p. 20). While research grants are available from UGC, HEIs reported that the UGC research application and award process is unnecessarily cumbersome.

A useful proxy measure of an institution's technological inventions and innovations that have potential economic value may be derived from a country's level of patenting. They also indicate technological readiness for moving into a knowledge economy. Faculty personnel and graduate students reported that equipment and machines often are not available for laboratory experiments as well as research activities. A background of supportive management practices needs to be crafted for HEIs in terms of experienced leadership, funding allocations, a framework for national and international collaborations, and enabling infrastructure of facilities, equipment and instrumentation to help them translate their creativity into workable innovations and local solutions based on technology.

### **Establishing A Research and Publication Culture**

Governments invest a great deal in research activities and researchers who lead them with the expectation that the country benefits in the long- term from increased productivity and enhanced social development. In Malaysia, the Government has designated five well-performing universities out of its 20 public universities as research universities which entitle them to higher levels of allocations for research in the annual approved budget. National and international collaborative projects are encouraged as are university-industry linkages, expecting some of these may be in time-designated Centres of Excellence. In Bangladesh, their UGC manages an Academic Innovation Fund open to public and private universities, administered on a competitive basis. The additional funds and a transparent public system of research funds allocation have energized the university sector as seen in recent research outputs.

In several colleges visited, including those which conduct PG courses, faculty had never been awarded research funding for projects nor had they printed an article in a journal of repute. However, given the general conditions of remuneration and working conditions, the finding was not unexpected. Moreover, allocations for research funding are negligible and access to other funds, given the absence of a research culture, seems insurmountable. At the State level, the Department of Higher Education needs to set up a competitive research grant scheme for HEIs, opening it up to public and private institutions to stimulate healthy competition and increase qualitative inputs. A well-organized competitive public research funding system, even if it starts small, can sow the seeds of significant research possibly leading to the commercialization of research outputs, helping to place institutions on the first few rungs of national and global research activities. Such a system needs to be transparent, well-monitored with a database in the public domain, an information system compatible with those of participating institutions, and a website that prompts full disclosure regarding announcements of available funds, details of application proposals, the process of selection and awards, and research findings.

### **Curriculum And Development (Self-Financing Courses)**

All colleges follow the state- approved curriculum with 20% room for adaptation in the curriculum to local situations, a positive sign if colleges had the relevant expertise and experience to benefit from the policy. The common undergraduate curriculum was seen as restrictive, and overly theoretical both in content and presentation, with insufficient attention to the need to prepare students for the job market. Pervasive curriculum issues include a focus on information recall and rote learning at the expense of critical and analytical thinking. These features are reinforced by the nature of assessments and examinations which focus on rote learning and



information recall rather than higher-order cognitive skills such as making inferences and judgments based on information and data or critical analysis.

Observations and field findings appeared to indicate that on becoming autonomous, colleges are anxious to both complete the syllabus/course on time as well as show good student results. To achieve this, there are reports that the curriculum has been diluted. Firstly, most colleges did not have the expertise locally available to review and renew the curriculum; secondly, they did not have the funds available to invite experts from different parts of the state and nation to collaborate. Some mechanisms can be developed to improve the curriculum with affiliating universities having a larger role. Different universities have their mission and vision and they must be allowed to follow their mission Curriculum revision is regularly taken up by the Board of Studies (BoS) in which specialists from other colleges are invited as required, a major responsibility is to review and monitor the curriculum during the academic year. The Board's findings provide the basis for changes to the curriculum within the 20% leeway which exists. Many of the changes reported dealt with peripheral rather than core issues of design and outcomes. It would be time to examine the impact of Boards of Studies on teacher performance and student achievement to identify ways in which the system could have a more positive impact on teaching and learning. Curriculum design is a crucial issue. All universities and all colleges need not necessarily have an identical syllabus. There is a difference between the different institutions (autonomous colleges and universities) and this difference needs to be understood as well as respected. The Biswas committee report (2009) has highlighted this role of the universities and the report has also been accepted by the Central Advisory Board on Education (CABE).

### **Self-Financing Course**

To generate funds, colleges conduct self-financing courses which fall outside the purview of Boards of Studies. Students pay tuition fees for these courses which are largely run by part-time faculty who are paid on a lecture basis. Sometimes a ceiling is fixed for payment to any single guest-faculty who cannot survive on this source of income alone. They tend to look for other part-time work restricting their time for teaching-related activities. Concerns include the fact that guest lecturers need not be in compliance with UGC qualification requirements nor is their course content and methodology subject to any kind of supervision by the college. This issue is more serious in private institutions. The performance of self-financed learners may be better than in regular programs as the course is run on time and properly. Students would benefit however if there were clear guidelines set by UGC or the State, regarding teacher qualifications, fees, course content and conduct of classes.

### **ICT Utilization**

Emphasis on and investment in modern communication technologies are ubiquitous. Funds have been given to making campuses Wi-Fi enabled and the use of communication technologies has become common amongst students, especially for social media. However, despite available funds and better connectivity actual use of institution-supported connectivity for academic use is often absent. For the professional development of staff and greater efficiency, both teaching and non-teaching ICT networks need to be embedded in institutions as an essential element in the lifelong learning and development process. For managers and administrators as well as academic staff, online training and enrichment modules are available on recent developments in content, policies as well as governance processes. Institutions need to work on popularising the use of infrastructure as well as connectivity.

### **Making Institutions Inclusive**

As a policy, India intends to make education for SC/ST and OBC categories of students completely free as well as support them through various measures. However large sections of these learners as well as the physically challenged are not provided with the support they require from the institutions. Children from weaker sections of society require special assistance in the language (especially English and sometimes other National Languages), Computer application, Mathematics and the Sciences, among others. Institutions should design and provide special classes in these areas to children. Some institutions are making serious efforts but concerted public will and supporting funds are required.

Hostels, as well as recreational facilities for the listed categories, are inadequate. There are instances of girls who have represented the State during their school days but have no sports facility at the college to develop their talent further. Sports centres and facilities need to be built for both boys and girls. Most campuses are unfriendly for blind, orthopedically challenged as well as mentally retarded learners. During discussions, officers/authorities appeared sensitive towards these issues but very little has been done in these areas on the campus.

It is suggested to enhance access and equity to labour market-relevant higher education for marginalized youth in remote areas. This could be done through a targeted effort to strengthen the quality of universities and colleges in remote areas with a high tribal population. Components of such an effort could be to develop: Satellite campuses to be established in remote areas to provide alternative innovative demand-driven short-term courses which are linked to livelihood and income-generating opportunities in the region. Online and web-based courses focusing on institutions' and students' needs in remote areas including piloting MOOCs courses. 'Earning-while-learning' type of vocational education will be developed and scaled-up in remote areas. Short-term courses



would be designed by the university/college in consultation with local industries and corporate houses. Resource persons from those industries/corporate houses could be engaged as resource person.

**Affiliating Universities, Affiliated Colleges and Quality Assurance**

Affiliating universities provide the teaching and assessment materials but do not follow up regularly with much-needed academic supervision and ongoing teacher support which would be key to quality enhancement in the many cases of under-staffed and inexperienced faculties at colleges. While regulatory norms prescribed by the state and UGC for taking on affiliated colleges exist and are known, it would appear that there is insufficient expertise or capacity to enforce them. Quality improvement grants are available from UGC but colleges cannot always meet conditional requirements for receiving them and it would appear that this is a nationwide phenomenon. Of the 16,000 colleges under UGC’s purview in 2008, 5,813 (36%) colleges received UGC grants having met the minimum standards required. Nationally less than 10% of 3,492 colleges had been accredited by NAAC, with major deficiencies attributed to the availability of qualified faculty, and physical and other infrastructural facilities .

In Odisha it is noted that NAAC accreditation has a long way to go. Only 41.67% of State Universities, where affiliating universities are key to the quality of the college system, have been accredited; Government Colleges, numbering 43, are doing better with 81.4%; and the large number of Aided and Private Colleges are doing poorly with only 21.25% and 12.03% respectively having received accreditation .

**Table-2 Basic Profile of Higher Education Institutions-NAAC Accreditation in Odisha**

	Total	2f	12B	NAAC Accredited	% NAAC Accredited to Total
State Universities	12	12	12	05	41.67
State Private University	03	03	03	00	00
Deemed Universities	02	02	02	02	100
Government Colleges	43	32	32	35	81.4
Aided Colleges	318	318	318	93	29.25
Private Colleges	316	00	00	34	12.03
Total Post-graduate Department at State university	174	00	00	00	00
Academic Staff Colleges	02	00		00	00

Source: State Plan for Higher Education, 2014, Odisha.

None of the State’s 174 Post-Graduate Departments has been accredited. It may be the case that NAAC is over-burdened and is unable to cover the institutions at a more accelerated rate; or that the institutions have not been able to meet the required criteria.

**Quality as Relevance**

Concerns about graduate unemployment resonate across the globe, with stakeholders calling for better linkages between higher education institutions and the workplace, helping students develop work-related experience and skills in efforts to improve employability upon graduation. Linkages can happen in many ways often relying much on local industry. In Odisha, unemployment is highest at the post-graduate level amounting to 42.86% which shows an increase of 66.6% over the previous year. Of Diploma and Certificate holders, 29.3% were unemployed compared with 23.1% of graduates (Issue Paper on Quality, Odisha).

The percentage change in undergraduate and post-graduate student enrolments according to the academic area is increasing over time. Disaggregated data sharpen the issue but given the preponderance of college graduates in the higher education sector, it may not be incorrect to say that college education does not match what employers look for, particularly at the post-graduate level. It would appear that the increases in enrolment are going in the right overall direction in terms of selection of discipline-Science, Engineering, Technology and Architecture reflecting one of the state’s objectives of providing quality education with multi-skills to make graduates more employable. The fact that Diploma and Certificate programs did not show any increase perhaps indicates that students are reading the market signals. The outlier seems to be the ordinarily popular Management programs whose enrolments dipped in 2009-2010 by 8.5%.

All HEIs have Student Placement Cells but not all are equally functional. Cells are headed on a part-time basis by a member of the faculty who is a full-time teacher of a discipline, fitting in the management of the cell where able. Skills development, much sought after by employers, was supported by some colleges through well-planned co-curricular activities and processes. A confounding factor in the setting of norms and ensuring their enforcement is the fact that while affiliating universities oversees all academic matters of affiliated colleges, some colleges are under the purview of UGC, AICTE and NAAC as well.



### **Leadership and Institutional Quality**

Vice-Chancellors (VCs) of affiliating universities in Odisha play a key role in managerial, administrative and academic leadership. Not only is this true in terms of their university and constituent colleges but also in terms of the heterogeneous body of colleges affiliated with them which, as in the case of Utkal University, numbers more than 300. Studies have highlighted the value of continuity of sound leadership in enhancing institutional strength. In a performance analysis of the National University of Singapore (NUS) and the University of Malaya (UM) between 1962 and 2008, it was found that during this period NUS had five respected scholars as VCs. This experience contrasts with UM's ten VCs over the same period: some were scholars, few from the civil service and many served a three-year stint and at least two did not complete their tenure. Few had the experience or could not develop these skills during their brief tenure to 'steer a large complex educational institution through a highly political environment. Many have, therefore, relied heavily on rigid government guidelines with scant regard for managerial, academic and financial autonomy' (Mukherjee and Wong, 2011). In the continuing efforts to climb world ranking tables, NUS has demonstrated how it has outshone UM and sound leadership over time has been acknowledged as a major element of its success.

### **Recent Initiatives**

The Odisha State Higher education Department has put in place several technology-based tools to increase accountability and efficiency in the system. It could be of value for the DoHE to carry out an impact evaluation of these innovations and assess the extent to which they have contributed to good governance. A more efficient governance and management system is not only more effective but also frees up resources for a stronger focus on learning outcomes: (i) The implementation of examination reforms where examination scripts are scanned and uploaded and examiners place their marks on the answer sheets leads to the makings of a transparent and efficient system.

The initial effort is directed at the 'plus 2' level examinations and is expected to be implemented at the undergraduate level in 2016. The system is linked electronically to the Higher Education Department which can zero in on any aspect of the examinations and their evaluation from its offices. Additional measures to increase trust in the initiative are the presence of CCTV surveillance which operates during the actual examination taking as well as the process of evaluation of exams. (ii) A key initiative in streamlining system management is seen in the digitization of personnel databases as well as payroll management. The Personnel Information Management System is a complete database of teachers in all government colleges whose bank accounts salaries are sent directly.

All training completed by teachers is captured in this system neatly facilitating overall faculty status information and development/training needs. A grant from UGC will support the HED in its plan to extend such digitization to nongovernment colleges. (iii) The ground-breaking Student Admissions Management System with its e-administration and re-admissions tools now permits student application to multiple HEIs electronically without having to be physically present, expanding program choices for students without the burden and expense of travelling in person to various campuses. Student performance is also tracked electronically. (iv) Other electronically-based reforms increasing overall system efficiency include the management of scholarship applications and awards (known as e-medhabruti) with funds transmitted from the Department of Higher Education directly to students' bank accounts; establishment of 55 language laboratories in collaboration with IIT- Kharagpur; and the Biju Patnaik SMART campus in College and University Scheme which aims at developing Wi-Fi ready campuses, library automation, language laboratories and SMART classes

### **Financing of Universities and Colleges**

The total expenditure on higher education by Odisha State government is approximately Rs.1, 200 Crore which represents 0.5% of its Gross State Domestic Product (GSDP). This includes plan and non-plan for revenue and capital expenditure. The state's annual per capita expenditure on higher education for its 18-23-year-old population is about Rs. 2,700 (EY, 2015). Odisha stands nineteenth in terms of per capita expenditure on higher education among all 30 Indian states with Goa (above Rs.14,000) and Tamil Nadu (about Rs.13,000) leading the way and Uttar Pradesh and Jharkhand bringing up the rear, both below Rs.1,000 (EY,2015). Odisha ranks among the lowest in India in capital expenditure on higher education with high levels of revenue expenditure on teacher salaries. Teacher salaries constitute approximately 98% of total expenditure in the state, higher than the national average of 85%, indicating a lack of funds available for instructional and research support such as laboratories, libraries, industrial visits, and training workshops and seminars. Even infrastructure maintenance is seriously underfunded.

Colleges determine fee structures for their various programmes. Salaries of regular staff follow government salary norms with colleges deciding on ad hoc staff salaries. Student fees and salaries of guest lecturers/ad hoc are fixed by colleges and fees from these courses provide some leeway for independently determining institutional expenditure. Little information is available on how the revenue from fees is spent. Expenditure on infrastructure and high-value purchases requires approval from the government, a process which causes delays. Colleges have access to funds for some levels of purchases and expenses but overall their financial autonomy is limited. Odisha state has the lowest level of financial decentralization in India with only 7% of expenditure of state



funds accessible by institutions contrasted with the national average of 43%. Limited financial autonomy constrains administrative processes and institutional potential to act nimbly or creatively in response to changing circumstances.

## CONCLUSION

To improve the health of the higher education system with incentives for institutions to implement and sustain quality-enhancing steps, the findings of this study support the financial management study proposals that (i) per capita expenditure be increased in Odisha based on a comparison with all states in India, allowing for increased expenditure on non-salary areas of development and support such as research and infrastructural facilities; and (ii) the low level (lowest in India) of funds transfer or decentralization from the State Higher Education Department to state institutions needs to increase significantly from the current 7% (the national average is 43%) (EY, 2015). To optimize the utilization of higher levels of funds transferred from the centre, well-considered institutional strategic development plans need to become a regular feature of HEIs and be monitored periodically to satisfy accountability requirements.

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