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A Novel Innovative Approach for Evolutionary Continuous Monitoring and Enhancement of Academic Delivery in Higher Educational Institutions

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ABSTRACT

This research work proposes a novel innovative approach for enhancement of academic delivery in higher educational institutions via an adaptive evolutionary mechanism of microlevel institutional internal audit. Concentration is exhibited on the various aspects of the relationship between innovations in higher education and the innovative capacity of the teachers in higher educational institutions. The role of higher education is primarily aimed at human and social development realized by identifying, training and providing the skilled and innovative students wherever required, based on continuously changing demand environments. Consequently, quality of Academic Delivery is identified as a prime significant factor in realizing effective roles of higher education necessitating continuous monitoring and enhancement of academic delivery. This research work dwells on the quality of Academic Delivery. The structure of this paper is designed as two parts, the first one as related to innovative approach in teaching & learning and the second part is on the ability of teachers to identify or create and apply innovative teaching methods. This research work is done at Sree Dattha Institutions, Sheriguda, Ibrahimpatnam, RR District, Telangana, India and the outcome of this research work is expected to usher in enhanced awareness and better concentration to quality of academic delivery and open new pathways for achieving enhanced academic delivery in higher educational institutions, bringing students out of the clutches of rote learning & helping the faculty to evolve as facilitator or enabler of efficient knowledge acquisition.

Keywords: Higher Education, Innovations, Academic Delivery, Pedagogy, Graduate Employability

INTRODUCTION

The most challenging dilemma for the educators in the upcoming century is that routine, rule based, knowledge which is easiest to teach and evaluate, it should also be easiest to digitized, automotive and outsourced. For this, innovative approach in academic delivery should be involved to enhance the quality of higher education. Institutions have identified and implemented innovations and best practices to differentiate among the different departments and to add value in their educational services. In this paper, we have discussed some teaching methodology criteria, developed indigenously and implemented during 2018-19 academic session. They are broadly classified under sixteen key aspects. The paper also contains some of the individual faculty best practices having visible impact on the quality of higher education imparted by the institution. The best practices concern teaching, performance, skill building, student involvement, collectively learning, value addition, learning objectives etc. Competency based education provides the flexibility in

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student's need, focuses on assessing learning mastery needed to be a well-functioning, and it is affordable because it is scalable in ways that create efficiencies [1-2].

The theoretical framework that underpinned the study included learning theories, learning styles as well as blended learning models relating to higher education. The significance of this study lies in the purposive use of blended learning that is facilitated by the effective combination of different modes of delivery, methods of teaching, learning theories, learning styles and competencies that are founded on effective communication and collaboration amongst all participants of the blended learning process [3].

There are number of traits required of the innovative faculty which include humility, courage, impartiality, open-mindedness, empathy, enthusiasm, judgment and imagination [4]. Brockbank and McGill [5] refer to reflective practice and learning and provide numerous examples of reflection in action by both academic staff and students. The focus must shift from 'talk and chalk' to how students learn and faculty need to instill a deep approach to learning by giving students varied innovative stimulating learning environments in order to create a deeper learning. Learning should be the result of lecturer motivation and facilitation and the students' learning-focused activities in which they are engaged and for which they assume ownership [6].

Hence, it is imperative that all faculty seriously engage in reflective practice and experiment with innovative methods where required. They should strive to use personalized strategies to teach and actively engage learners in course content. Stensaker [7] argues that in order to achieve quality teaching and learning, greater attention must be paid to teaching and learning practice. Traditional methodologies of 'talk and chalk' which are teacher centered are not adequate for current students and that effective teaching and learning is not taking place at the desired level [8]. High-quality learning outcomes are achievable provided students assume greater control over their own learning [9].

Current scenario

Some lecturers still following the conventional method of teaching and learning whereas some lecturers have been adopted the new innovative approach in teaching and learning. Teaching is mainly based on the syllabus and prescribed textbooks. In many lecture rooms, teaching and learning techniques are outdated and theoretical knowledge is still disseminated through the technique of talk and chalk. Learning is the process which develops the desired changes in the thought process of the student. Some faculty believe that knowledge is transferred to their students, but in reality students learn by doing and this is reinforced by the use of innovative teaching methodologies. However, it seems that when faculty try to be innovative in the learning environment, many fall short, and students thus often prefer to be assessed in a conventional manner. Students need ample opportunity to share ideas with the faculty as well as with their peers and this becomes difficult with large groups of students in one class. Each discipline undoubtedly has unique challenges as well as advantages and opportunities when it comes to innovative teaching.

This paper reports an internal exercise to ascertain the current standing of academic

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delivery in the Institution and identify avenues for improvement. The conduct of the internal exercise, observations, analysis and inferences was very encouraging and promised good scope for evolutionary sustained improvements. Consequently, this systematic internal exercise is reported as a research article, so that it can help faculty and other Institutions and Universities, in their quest for innovative approaches to enhance academic delivery.

Innovative approach in teaching & learning

Among all the recent innovations in the education system, the use of computers in classrooms is called the most significant innovation. While the physical appearance of 6 level in classrooms has not changed much since chalkboards were introduced in Prussian classrooms in the late 18th century [10]. The arrival of computers, tablets, and the Internet has led to the re-thinking of many traditional teaching practices and is generally seen as an opportunity for improvement [11]. While this section focuses on innovative teaching and learning methods suggested by the ALL INDIA COUNCIL OF TECHNICAL EDUCATION (AICTE) and JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD but this does not imply that other innovative methods are less effective or have less potential. From a methodological point of view, most of these innovative methods are difficult to evaluate quantitatively using observational data. One reason is that concepts like seminar-based learning are difficult to evaluate and distinguish from other teaching and learning methods. Second, the introduction of one new teaching method is often combined with the other new methods, which makes it difficult to separate their effects. Third, the extent to which one of the methods is applied is difficult to measure. For these and other reasons, reliable empirical evidence on the effectiveness of new teaching methods were collected and presented so that optimum outcomes can be achieved.

The Innovations in teaching methodology introduced at *Sree Dattha Institutions, Greater Hyderabad* carry the primary goal to achieve the learning objectives, blooms taxonomy, innovative approach in both study and research including Academic Delivery inclusive of & beyond text book content, aimed at enhancing student potential for logical & strategic analysis and problem solving. Bloom's taxonomy is a set of three hierarchical models used to classify educational learning objectives into levels of complexity and specificity. The three lists cover the learning objectives in cognitive, affective and sensory domains. The cognitive domain list has been the primary focus of most traditional education and is frequently used to structure curriculum learning objectives, assessments and activities [12-13].

Teacher's ability to invent and apply innovative teaching methods

To evaluate the innovative approaches in teaching methodology adopted in classroom by faculty of the all departments, an exhaustive set of 19 criteria was prepared, observations done and inferences derived from characterization of the observations. The observations and their analysis are presented below.

Results & Discussion:

An exhaustive set of 19 criteria was prepared and each criteria was assigned a label. The observations for each criteria was quantified

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over a suitable range with convenient steps. Audit of each faculty among the chosen 40 was done. Observations were taken and recorded. Graphs were then plotted based on the numeric quantified observations.

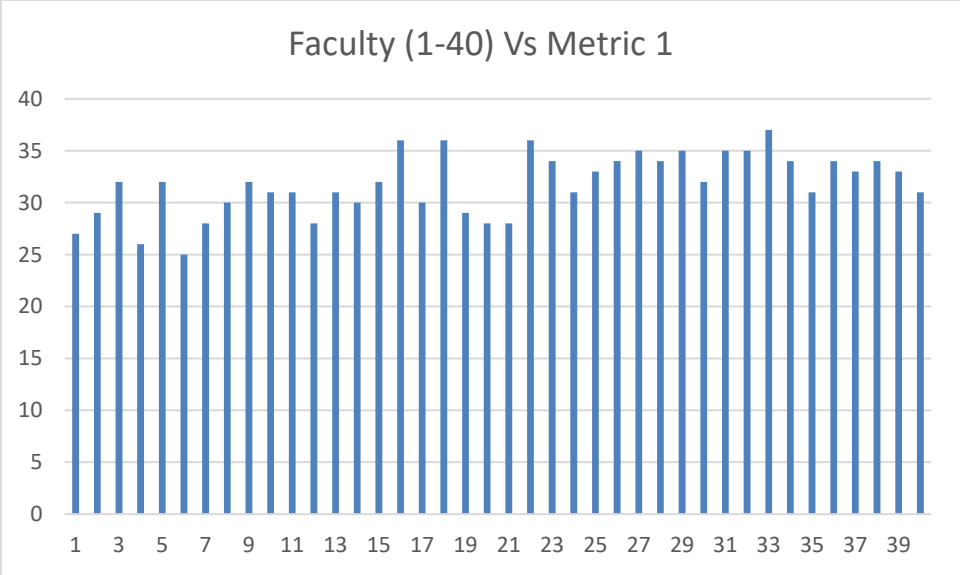

Figure 1. Faculty (1-40) Vs Metric 1

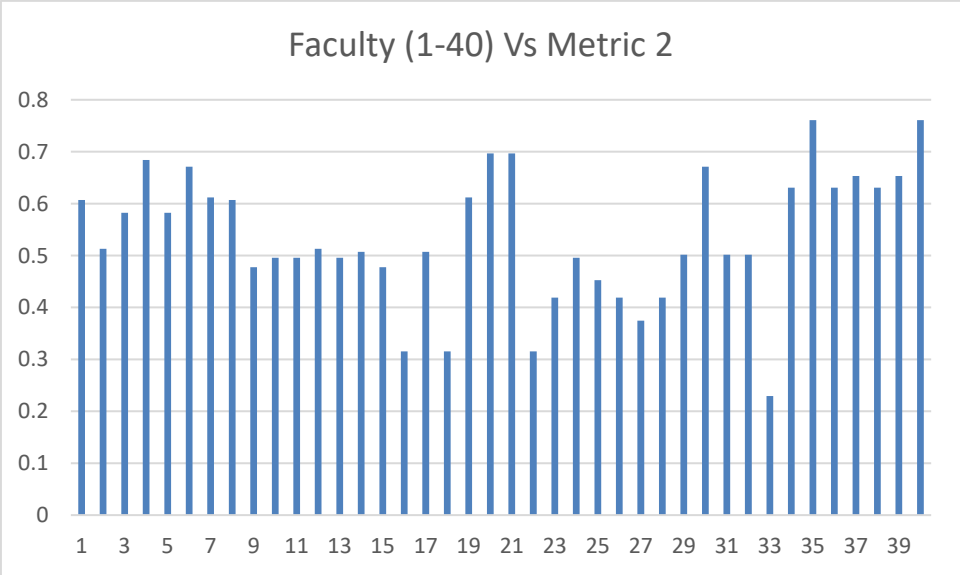

Figure 2. Faculty (1-40) Vs Metric 2

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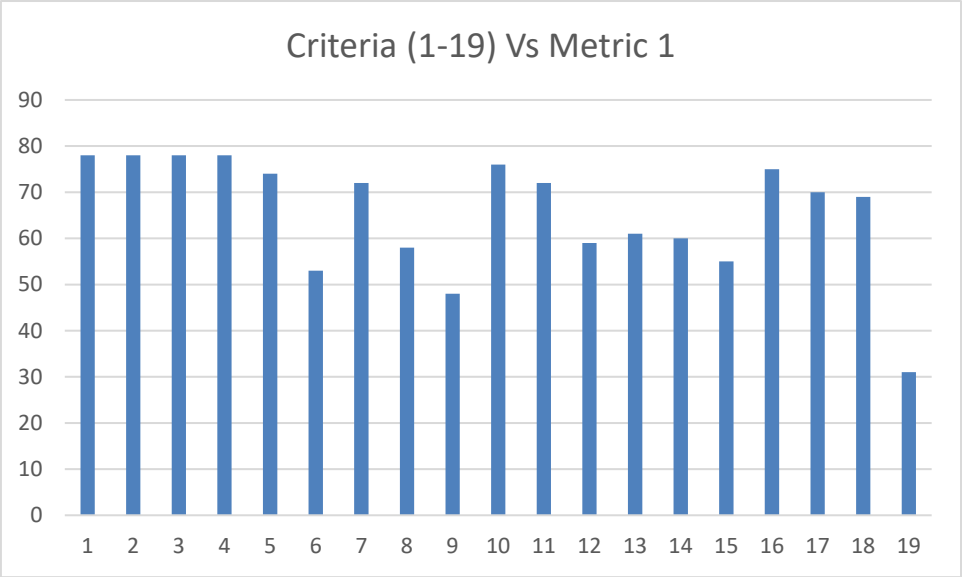

Figure 3. Criteria (1-19) Vs Metric 1

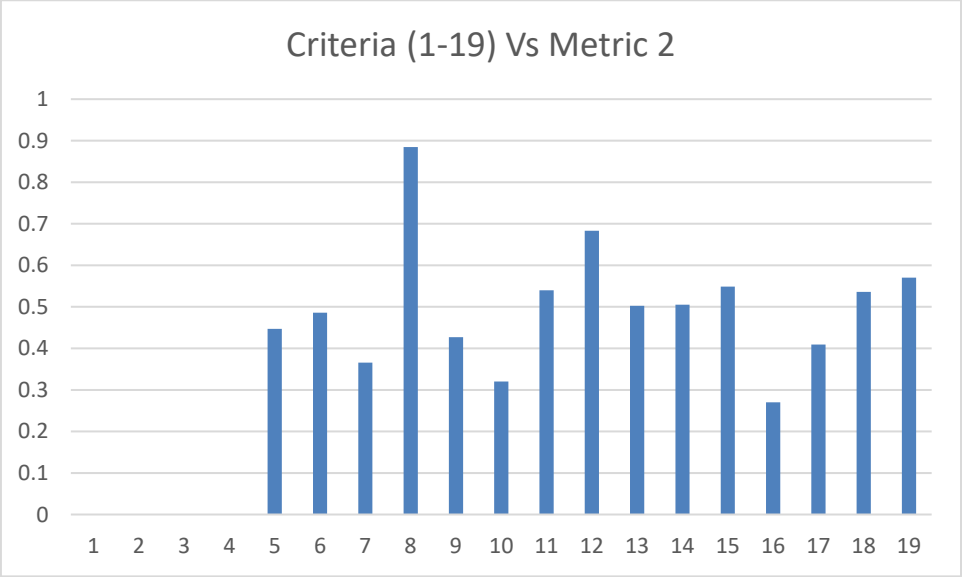

Figure 4. Criteria (1-19) Vs Metric 2

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Figure 1 indicates cumulative comparative metrics obtained by 40 faculty in the audit. The faculty with higher scores have performed well in the audit. Those faculty with comparatively lower scores need to improve on areas pointed out as insufficiencies.

For example in figure 1, those faculty members who acquired 90 percentile or above score can guide to those who acquired lesser score. Figure 1 indicates that faculty bearing serial number 16, 18, 22 and 33 have performed well and may mentor those faculty members bearing serial numbers 6, 4, 1, 20 and 21 (who have less scores).

Figure 2 indicates consistency in faculty as per requirements specified by the audit. A lower value of the metric indicates better consistency, while a higher value indicates inconsistency.

For example in figure 2, those faculty members with lower scores like serial numbers 33, 16, 18 and 22 have exhibited better consistency and can mentor those faculty members having inconsistency (serial numbers 35, 40, 20 and 21).

Figure 3 indicates cumulative comparative metrics obtained by 40 faculty as per individual criteria in the audit. Those criteria with higher scores have been sufficiently attended by the faculty. Those criteria with lower scores indicate that faculty need to concentrate comparatively (as per indicated graph) for each criteria.

For example figure 3 indicates that Criteria numbers 19, 09, 06, 15, etc. need to be concentrated by faculty members, as the majority of the faculty have ignored or "not performed well" in these criteria. The observations relating to these criteria should be in line with the observations relating to criteria 1, 2, 3 and 4, where it is understood that faculty members have given more concentration to these criteria as evidenced by the highest saturated values of criteria 1, 2, 3 and 4 in figure 3.

Figure 4 indicates consistency of audit criteria in the faculty. Those criteria with minimal values have been attended well by the faculty, while those criteria with higher values indicate that faculty have been inconsistent while attending to those criteria.

In figure 4, the graph indicates that observations related to criteria number 16 is the lowest, indicating very degree of consistency of faculty effort relating to criteria 16. Further, the observations relating to criteria 1, 2, 3 and 4 exhibit highest consistency of effort. The faculty effort relating to other criteria should optimally become equivalent to that of criteria 16 or even in the ideal case become equivalent to that of criteria 1, 2, 3 and 4.

Future Work:

This research work has provided a novel innovative approach for evolutionary continuous monitoring and enhancement of academic delivery in higher educational institutions. Consequently, this research work will be continued in future, in areas that demand attention, to ensure that this novel innovative approach is robust and efficient.

Conclusions

This research work has proposed a novel innovative approach for enhancement of academic delivery in higher educational institutions via an adaptive evolutionary mechanism of microlevel institutional internal

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audit. This microlevel institutional internal audit has indicated the direction of evolution and concentration that needs to be applied to every aspect of academic delivery for achieving best results, that every Institution aspires to achieve. These methods as proposed in this research work can be tested and applied, with minor modifications to suit the aims of any institution.

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