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Comparative study of teaching learning process and assessment in the school of Vadodara

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Abstract---The changing context of higher education necessitates the evolutionary step to impart knowledge and skills relevant and essential to prepare the students for future course of action. Innovative teaching learning practices are needed in order to meet the demands of the current knowledge age and to develop skills needed to succeed in live and the workplace in 21st century. The purpose is to make the exercise of teaching and learning more enjoyable and satisfactory. The paper specifically compares the teaching learning methods, learning styles and innovative techniques applied in school of Vadodara. Descriptive exploratory survey design was employed in the present study to answer the research questions. The study was carried out in school of Vadodara. A total of 17 teachers and 105 students provided data for the study. The findings of the present study revealed that techniques applied in teaching and learning as reported by students refer to: team based techniques; and technology based techniques. The data reflect that the students of school of Vadodara depend more on teacher based learning as well as self-learning. Innovative teaching activities being used by 28.23%, and 43.33% teachers refer to MOOCs, project competition, flipped classroom, and VAK (Visual Audio Kinaesthetic) style of learning.

Keywords---Methods and techniques, learning styles and innovative practices, Higher Education.

Introduction

Throughout the world, though higher education is growing at a rapid rate, it is constantly under pressure to cater to the needs of the society due to: explosion of knowledge, information and communication; population explosion; aspirations of the youth and focus on capacity building.¹ This calls for continuous upgradation of the skills for global interdependence, which necessitates learning throughout

life. In view of the huge demand for higher education from all the strata of society, other pressures are causing concern with respect to accessibility, equity, quality and resources. It has necessitated learning throughout life for human development and economic growth.² The changing landscape of higher education is placing more pressure on universities and institutions to think differently in order to deliver more efficient graduates who are able to thrive in that evolving landscape and need to depart from ideas of yesterday. Use of the team based techniques of teaching and learning, which are appropriate in the technical and professional fields are helpful to increase the work efficiency and productivity of the students.³

The higher education system have to face a great variety of challenges due to rapid advancement. Therefore, rigorous training of individuals is required in interdisciplinary field. Higher levels of disciplinary and other contextual expertise is required in university teaching, as it is a scholarly activity that draws on extensive professional skills and practices. In order to ensure quality, a shared understanding is required for an effective university teacher. Teaching strategies can be applied in a variety of content areas to meet different types of learning objectives. For example questioning, organizing lessons, providing feedback, starting lessons with a review and ending with closure, applicable in all teaching situations. These strategies can be applied across instructional settings. Effective university teaching requires a particular set of skills and practices in accordance with requirements.⁴⁻⁷

In the traditional system, teaching methods were teacher-centric without taking into consideration the students' needs and interests. This requires change in instruction in which their needs of students are considered that results in change in behavior. Moreover, a large number of graduated students especially bachelor holders do not feel ready enough to work in their related fields. In order to cater to student diversity, effective teaching must be able to manage and address such diversity, which arises due to the massification, and the internationalization of Indian higher education.⁸⁻¹⁰ A wider range of both learning styles and preferences and a wider range of language, cultural and educational backgrounds are required to engage all students.

Objective of study:

1. To assess and compare methods and techniques applied in teaching and learning used in school of Vadodara.
2. To assess and compare the styles of learning, advantages of preferred style of learning used in school of Vadodara.
3. To assess and compare the activities that foster innovative practices evolved in teaching and learning used in school of Vadodara.

Material and Methods

In the present study, the sampling technique used was both incidental and purposive in nature. It comprised of all those students present in the classes in the subjects concerned, and were taken as such at the time of data collection. The study was carried out in Parul University, Vadodara, Gujarat. Sample size of the

study population included teachers, which comprised a total of 17 teachers and Sample size of the student population, included all students, which comprised a total of 105 students who formed the sample for the present study.

The data collected from the Teachers and students mainly involved interactive/interview sessions held individually with them. For conducting interviews, appropriate questionnaire-cum-Interview for teachers were prepared for each of the concerned personnel. Keeping in view the role and responsibilities of the teachers, the questions addressed to them relate to innovation in teaching/learning practices. The focus of interaction with the regular classroom teacher was to assess and compare method and innovative practices evolved in teaching learning process used in school of Vadodara.

Questionnaire for Students

It deals with their expectation and satisfaction regarding qualitative aspects of the curriculum, teaching-learning and evaluation, preparation for life, and overall development of their personality. The questions centred round teaching-learning practices and the styles of learning, advantages of preferred style of learning.

Techniques used for analysis of Data

The entire data obtained from the three sources viz the teachers, and the students, required simple analysis of finding percentages of the responses elicited from the respondents.

Results and Discussion

The main purpose of teaching is to impart knowledge and skills relevant and essential to prepare the students for future course of action. The quality of teaching not only depends on the teacher's pedagogical skills but also on learning environment catering to needs of students. Innovate technologies have entered the classroom, thus calls for modifying the nature of the interactions between students and professors which requires emphatic attitude for students and passion for learning.

Process of Teaching and Learning

Year after year, graduates of Institutes of Higher Education, be it technical or professional, fail to seek employment primarily because they lack professional attributes and technical competencies.

The skills required in global market as professionals refer to:

- Aptitude for project management.
- Interpersonal skills, to work in team.
- Communication skills.
- Integrity: professional ethics.
- Sincerity of purpose.

Along with professional competencies, technical competency is required too, which refers to:

- Technical knowledge and understanding.

- Exposure to industry.
- Innovations.

In general, students lack practical knowledge and understanding to equip themselves with professional and technical skills. The need is of proficient teachers and learners' initiative to accomplish the tasks and achieve the targets. It refers to the modalities of teaching and learning.

The teaching-learning modalities are teacher centred, and learner centred. The learner centred teaching techniques are participative learning, experiential learning, collaborative learning that facilitate process of construction of knowledge. More recently digital resources of learning are more individualized, creative and dynamic. Quality of learning depends on teachers' readiness and initiative to make use of the available technology to enhance the process of teaching and learning.

It will be pertinent to differentiate between Method and Technique.

Method is the process: regular and systematic way of doing something to accomplish the task by series of related acts performed by the teacher. Technique is the practical aspect of given task i.e. concretization of method of teaching. It is one of the manifestations of method.

Since the traditional methods i.e. teacher centred techniques are gradually being supplemented by group work, student centred and technology based individualized learning, an attempt was made to find out to what extent new techniques of teaching and learning have made inroads in professional and technical education. Accordingly, the students were asked to mark: apart from routine classroom teaching, which of the following techniques are applied in their subject. The responses relating to techniques of learning and teaching are recorded in table 1:

Table 1: Methods and Techniques of Teaching and Learning

Techniques of Teaching and Learning	Variables	Total
	N	%
Team based		
Problem centred	12	70.59
Project based	15	88.24
Cooperative learning	11	64.71
Brain storming	08	47.06
Technology based		
Online learning	14	82.35
Flipped classroom	12	70.59
Web conference based interactive tutorials	09	52.94
Special expert sessions	04	23.53
Tactical methods: Industrial visits	02	11.76

As is evident from above table, Problem based learning is applied in 12 (70.59%) cases. Project based learning is mentioned by 15 (88.24%) respondents.

Cooperative learning is being applied as per 11 (64.71%) respondents. Brainstorming is being used according to 08 (47.06%) cases. Technology based Techniques of Teaching and Learning, which include online learning, is applied by 14 (82.35%) cases. Flipped classroom technique is mentioned by 12 (70.59%) teachers. Web conference based interactive tutorials is another new technique being applied in teaching and learning according to 09 (52.94%) respondents. Tactical method including Industrial training and visits focuses on practical implementation of acquired training. It provides students with an opportunity to learn practically over and above the theoretical concepts. It is skillful to use available means to achieve an objective. Tactical enables students to understand actual work environment, which is not possible in lectures. It enhances interpersonal skills and communication.

Styles of Learning were assessed to understand the styles of learning, advantages of preferred style of learning. In the realm of teaching and learning, as the teachers have their own preferred style of teaching, the students evolve their own style of learning. In case of students either they depend more on self or on the teacher to acquire knowledge and skills. Students were asked about their preference of learning whether self or teacher based learning, they responded to the question as listed in the table: 2.

Table 2: Students' Preferred Style of Learning

Students' Preferred Style of Learning	Variables	Total
	N	%
Self-learning	102	97.14
Teacher based	101	96.19
Both	104	99.05

Self-learning: 102 (97.14%) students expressed their preference to self-learning (t-value is significant at 0.01 level).

Teacher-based learning: In Indian conditions dependence on teachers is more because of teacher-centred classrooms. Therefore, 101 (96.19%) students depend more on teachers' guidance to learn and perform the task.

Both: It is a combination of self-learning and teacher-based learning. In case of 104 (99.05%), their style/preference of learning is a combination of both self and teacher-based learning.

Fostering Innovative Practices in Teaching was checked to assess the activities that foster innovative practices evolved in teaching and learning. Out of 17 teachers, whose ideas are appreciated by the authorities were further asked to enumerate activities that foster innovative practices in teaching. Their responses have been recorded in table: 3 to follow.

Table 3: Activities to Foster Innovative Practices in Teaching

Foster Innovative Practices	Variables	Total
	N	%
Innovative teaching activities	3	17.65
Outside exposure of students	7	41.18
Research	4	23.53

According to the teachers Innovative Teaching Activities refer to Flipped classroom practice, Visual Audio Kinesthetic (VAK) style of teaching visual aids, NPTEL: National Programme on Technology Enhanced Learning, MOOCs: Massive Open Online Courses, Innovative Project Competitions and Project based Evaluation, Animated Videos, Group Discussions and Peer-to-peer teaching and learning. Outside Exposure of Students refer to Industrial visits, Workshop/Conferences/Seminars, Expert talks, Power Point Presentation and Online lectures.

Research Activities as mentioned by teachers centre round Updating of lectures through published research work in their discipline, Student involvement in research projects and Inclusion of industrial research in their assignments.

Conclusions

Techniques applied in teaching and learning as reported by students refer to: team based techniques; and technology based techniques. Team based techniques are problem centred, project based; cooperative learning and brainstorming. Technology based techniques of teaching and learning as mentioned by students are: online learning; flipped class-rooms, web conference based interactive tutorials. It appears that application of team based and technology-based techniques are more in vogue in Private Universities, as reflected in the responses of the students. Styles of Learning vary from student to student. The data reflect that the students of Private Universities depend more on teacher based learning, and the government University students depend more on self-learning.

Educational Implications

The innovative methods used by the teachers develop competencies among the students, which reflect quality in terms of adequately educated, highly satisfied, and employable graduates. The purpose is to make the exercise of teaching and learning more enjoyable and satisfactory. The process of producing employable graduates spans entire educational spectrum that will allow graduates to adapt to a rapidly changing and diverse world of work emphasizing on adequate skills and competencies of graduates. In general, students lack practical knowledge and understanding to equip themselves with professional and technical skills. The need is of proficient teachers and learners' initiative to accomplish the tasks and achieve the targets. It refers to the modalities of teaching and learning. In designing the curriculum, the need of the day is to: Focus more on practical knowledge, hand on experience; industrial visits, and industry linked internship programme. These are essential inputs to ensure quality in technical education.

In view of the limited opportunities to be employable in global market, there is need to strengthen the connection between skills and aptitudes of the graduates, with that of the requirements of the industry. The institutions need to provide maximum opportunities to choose electives from diversified options to meet their objectives. More recently digital resources of learning are more individualized, creative and dynamic. Quality of learning depends on teachers' readiness and initiative to make use of the available technology to enhance the process of teaching and learning.

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