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Advancement in Digital Age: Educators' Opinions about Effective Teaching Methods

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ABSTRACT

Effective teaching contributes to effective learning. Due to changing nature of learning and preferences to teach, there is an intense need for professional development among teaching fraternity. The importance of using technology like E-learning through various online modules in various fields is gradually increasing. In the year 2012-13 according to National Students Clearinghouse Research Centre, number of platforms launched by many institutes increased by 23%. According to Udemy popular online learning platform, 8.5 million users use Udemy to study business in addition to 10 million students. E-modules facilitate learning by offering convenience in time and place, socialism, assessment clarity and records.[1] Blend of offline online teaching or learning also offers so many advantages to teachers and students. This paper aimed to review learning through online and face to face teaching methods at each level of bloom's taxonomy through researcher's experiences and opinions surveyed using structured questionnaire. The focus was to assess the extent of usage and analyze opinions for effectiveness of various teaching method and recognize each under various bloom's level. Additionally the study explored the impact of class size, course level and type, gender and designation of teacher on effectiveness of using various teaching methods. Results indicated overall positive perception for effectiveness and impacted by all identified factors except gender. Educators can select suitable method based on identified results to enrich class experiences in learning.

Key Terms—bloom's taxonomy, educators' perception, effective teaching methods, teaching advancement

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I. INTRODUCTION

Learning is a conceptual change and a key to improve knowledge. Concurrence of interactive learning and the digital age urges teacher's to offer learning in which students are encouraged and supported to work together to explore various ways to innovate, find the solutions, create knowledge rather than recite what they think is the right answer. In early years, teachers go to class and expect students to listen what they speak and assess their learning through written exams and its result [5].However it offers content but miss the other component of knowledge which is skills. Nowadays skills are at utmost importance to get employment or to survive in business world. Interactive and collaborative teaching serves the purpose of complete learning whether it is online or offline. The skills required in knowledge society are communication, flexibility, teamwork, thinking, digital, knowledge management and many more.[6] Adhere to that curriculum should be designed with class learning outcomes suggested as Bloom's taxonomy six levels: remembering, understanding, applying, analyzing, evaluating, creating. However teaching method needs pre attention to achieve those outcomes. In this time when students become digital natives and their life end up with various media and apps only campus focused Interactive teaching or E-teaching are the only options over traditional classroom teaching. [7]

II. TEACHING METHOD: CAMPUS FOCUSED

Marton and Saljö, who have conducted a number of studies that examined how university students actually go about their learning, make the distinction between deep and surface approaches to learning (see, for instance, Marton and Saljö, 1997). Traditional lecture system focuses on: information transmission, tests that rely mainly on memory, a lack of interaction and discussion.[8] Where deeper approaches focus on: analytical or critical thinking or problem-solving, in-class discussion, assessment based on analysis, synthesis, comparison and evaluation.

A. Interactive offline Teaching Methods

Fig.1 displays outcomes which could be achieved through employing various offline teaching methods at bloom's levels. Teachers can adopt case study or role play or various hands-on activities to extend learning up to application, analysis and evaluation level.

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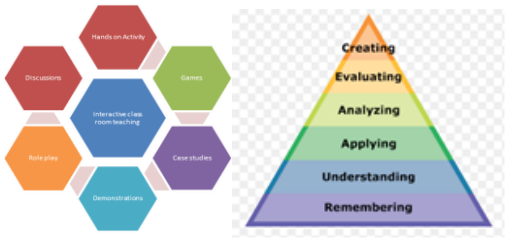

Fig. 1. Offline teaching methods linked with bloom's texonomy

B. Teaching Method: Online Focused

Online teachings go beyond medium only as it requires independence where students can learn in the absence of teacher. Educator's know-how, institutes support, time to learn and prepare are the few parameters which tunes the learning outcomes online. However, not all online courses are structured the same way can be developed based on scheduling and availability of on campus medium.[9]

1) Synchronous Online class

Synchronous class replicates live, traditional coursework as closely as an online class can. These are not limited to just content delivery method but combine them with additional technologies to accommodate a wider range of learners. Fig.2 shows few tools those support real-time communication:

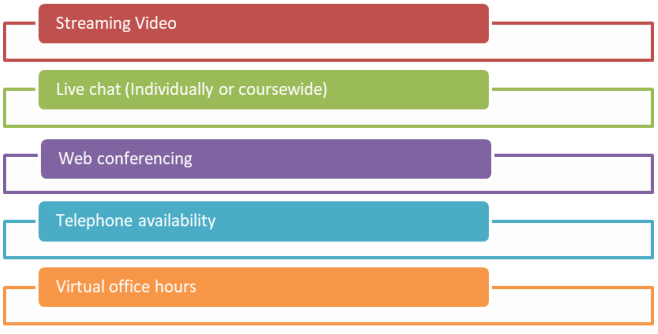

Fig. 2. Syncroneous online class teaching methods

Some online professors also capture and upload lecture videos and chat transcripts for students who miss the class.

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2) Asynchronous Online class

Online courses that allow students to view lectures, access materials, and collaborate with teachers and peers on their own schedule are called asynchronous courses. There are various technologies being adopted by educators as shown in fig.3.

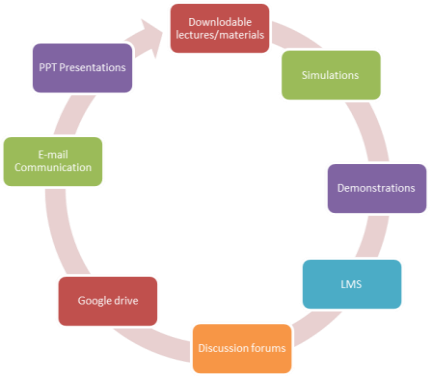

Fig. 3. Asyncroneous online class teaching methods

Learning management systems (LMSs) typically allow instructors to record lectures, deliver them live, or both. However, it is helpful to keep in mind that lectures place students in a passive role.

Simulations delivered in a realistic digital environment allow online students to test practical skills and knowledge remotely.[10] Online instructors frequently upload recorded video demonstrations to the LMS regardless of whether they delivered them synchronously or asynchronously. Students can review these clips as often as necessary to master the lesson.

III. OFFLINE TEACHING EXPERIENCES

A. Group Discussion

No group can exist without communication and No one can compete without effective group efforts. Increasing importance of group communication urges students, to impart group dynamism. GD provides stage to develop interpersonal skills. Students of MBA 1st year did group discussion on “Effect of Pulwama Attack" in addition to many other such exercises as a part of class activity in the course of communication Skills for Managers.

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Image.1. Group Discussion on “Effect of Pulwama Attack"

B. Poster Presentations

Creating poster and presenting it on given topic in front of whole class will be more effective instead of listening and writing down in book from blackboard. Exploring detail on topics and putting on to poster creatively help to stimulate the flow of ideas and encourage students to think out of the box. In fact presenting the posters in front of the class also helps to develop presentation skills. BBA final year students in the course of Export Import Procedures , learned various countries presence and positions in export import business by preparing posters for allotted counties in the form of " Export Import Observatory" by adding up creativity in the posters and presented as learning activities in the Library setting.

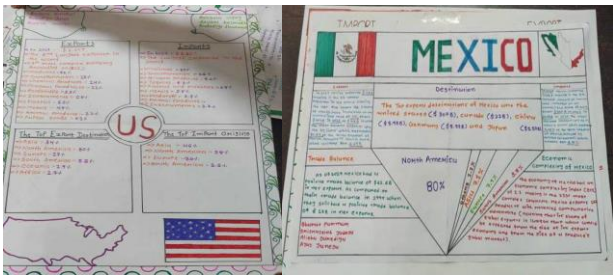

Image.2.Poster presentation on Export Import Observatory

C. Hands on Activity – Demonstrations

With raising Interest and motivation to think demonstration found to promote thinking skills and to enable students to think more creatively. It will help students to focus on a certain idea, fact, event or process by experiencing real thing, process or event. Students of BBA second Year learned the

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marketing concepts like price, label, packaging, promotion, product differences, target customers by demonstrating various products in the class with fierce interest and involvement.

Image.3. Marketing Concepts through product demonstrations

D. Role Play

It is an act of imitating or performing a role of other that is different from oneself. Role play, allows student to explore situation and differentiate performance according to situation while experiencing the same position. Leaners will apply knowledge gain from theory to practical situation. Students of MBA performed various role play on given situation in the course of general management and communication skills for managers that allowed them to think and act on various real time situations and apply own strategies to act in.

Ex. Situation: an angry customer comes in to speak to a member of staff to make a complaint. They are threatening to go to a consumer watchdog. Your objective is to resolve the issue with minimum financial and reputation damage to the company.

Image.4. Role plays of various business situations

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IV. ONLINE TEACHING EXPERIENCES

A. Learning on LMS

Online teaching offers many benefits over offline teaching like onetime time investment, students' involvement with interest, evidence impact, and feedback ease. However it demands preparation time, technological know-how, institutional resource support and guidance. In the side of asynchronous online teaching, we conducted many time streaming video session at the time of budget session and any national events like AIMA convention. It has really offer real time knowledge from distance may not be possible without streaming video.

CANVAS is a Learning Management System which is being used in our university as a part of asynchronous online teaching where instructors develop their own courses and design modules in line with decided class learning outcomes.

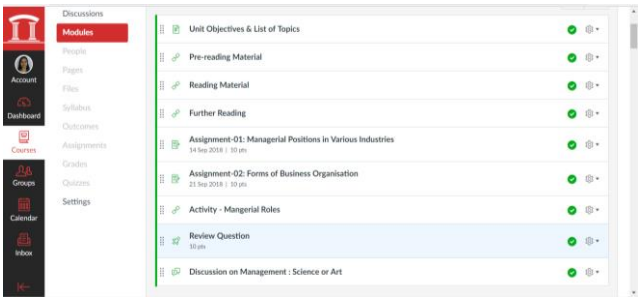

Image.5. Module on CANVAS course

V. RESEARCH METHODOLOGY

The objectives of this study are to a.) Review extent of usage of various teaching methods by educators. b.) Recognize teaching methods under bloom's taxonomy c.) Analyze educator's perception regarding effectiveness of various teaching methods and its association with course type, level, class size, designation and gender of teacher. This exploratory cum descriptive study review the class teaching methods and effectiveness by pausing few real practices and collected opinions of teachers of RK University, Rajkot through survey method using structured questionnaire. Anova and Factor Analysis have been used.

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VI. RESULTS AND DISCUSSIONS

Data here represents collection of responses from 30 educators teaching in various streams at undergraduate and post graduate level having different designations. Below given table shows respondents 'profile.

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	17	56.7	56.7	56.7
Female	13	43.3	43.3	100.0
Total	30	100.0	100.0	
Designation				
Assistant Professor	24	80.0	80.0	80.0
Associate Professor	3	10.0	10.0	90.0
Professor	3	10.0	10.0	100.0
Total	30	100.0	100.0	
Course_Level				
Under Graduate	6	20.0	20.0	20.0
Post Graduate	24	80.0	80.0	100.0
Total	30	100.0	100.0	
Course_Type				
Engineering	8	26.7	26.7	26.7
Science	2	6.7	6.7	33.3
Management	6	20.0	20.0	53.3
Maths	1	3.3	3.3	56.7
Pharmacy	4	13.3	13.3	70.0
Physiotherapy	9	30.0	30.0	100.0
Total	30	100.0	100.0	
Class_Size				
21-40	6	20.0	20.0	20.0
41-60	14	46.7	46.7	66.7
61-100	9	30.0	30.0	96.7
>100	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Table: 1 Teacher's Profile

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Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.505	21.122	21.122	9.505	21.122	21.122
2	4.952	11.005	32.128	4.952	11.005	32.128
3	4.547	10.104	42.232	4.547	10.104	42.232
4	4.088	9.084	51.316	4.088	9.084	51.316
5	3.756	8.347	59.663	3.756	8.347	59.663
6	3.375	7.499	67.162	3.375	7.499	67.162
7	2.592	5.760	72.922	2.592	5.760	72.922
8	2.154	4.788	77.710	2.154	4.788	77.710
9	1.869	4.153	81.863	1.869	4.153	81.863
10	1.675	3.722	85.585	1.675	3.722	85.585
11	1.303	2.895	88.480	1.303	2.895	88.480
12	1.044	2.319	90.799	1.044	2.319	90.799
13	.993	2.206	93.004			
14	.768	1.706	94.711			
15	.674	1.498	96.208			
16	.558	1.240	97.448			
17	.434	.964	98.413			
18	.298	.662	99.074			
19	.255	.567	99.641			
20	.162	.359	100.000			
21	8.607E-16	1.913E-15	100.000			
22	7.394E-16	1.643E-15	100.000			
23	6.861E-16	1.525E-15	100.000			
24	4.713E-16	1.047E-15	100.000			
25	4.406E-16	9.791E-16	100.000			
26	3.691E-16	8.202E-16	100.000			
27	2.851E-16	6.335E-16	100.000			
28	2.710E-16	6.023E-16	100.000			
29	2.322E-16	5.160E-16	100.000			
30	1.851E-16	4.113E-16	100.000			
31	1.559E-16	3.464E-16	100.000			
32	7.515E-17	1.670E-16	100.000			
33	2.991E-17	6.648E-17	100.000			
34	-3.532E-17	-7.848E-17	100.000			
35	-1.076E-16	-2.392E-16	100.000			
36	-1.597E-16	-3.549E-16	100.000			
37	-1.845E-16	-4.101E-16	100.000			
38	-2.717E-16	-6.038E-16	100.000			
39	-3.270E-16	-7.267E-16	100.000			
40	-3.751E-16	-8.335E-16	100.000			
41	-4.613E-16	-1.025E-15	100.000			
42	-5.207E-16	-1.157E-15	100.000			
43	-6.018E-16	-1.337E-15	100.000			
44	-7.608E-16	-1.691E-15	100.000			
45	-8.127E-16	-1.806E-15	100.000			

Extraction Method: Principal Component Analysis.

Table: 2 Total Variance Explained

As per table-2, 12 methods have been extracted through principle component analysis and categorised out of 45 using factor analysis based on loading and summarised with reference to bloom's level which are thinking & reflecting, interpreting and analysing, self-learning, discussions, brain storming, review and reflection, particle learning, assessment by writing , communication skills, team learning, lab activities and collaborative learning.

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Gender						
	Wilks' Lambda	.768	.603[b]	4.000	8.000	.672
Designation						
	Wilks' Lambda	.030	9.494[b]	8.000	16.000	.000
Cour_Level						
	Wilks' Lambda	.089	20.414[b]	4.000	8.000	.000
Course						
	Wilks' Lambda	.011	7.883	12.000	21.458	.000
Class_Size						
	Wilks' Lambda	.147	11.651[b]	4.000	8.000	.002

Table:3 Multivariate Test

As shown in table: 3, teachers' opinion for effective teaching methods differs based on courses type, class size, course level, designation except gender. Collaborative activities are highly affected by class size.

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Course Level	Class Size	Course Type
Online Lecture	Team_Based_Cooperative_Learning	Team_Based_Cooperative_Learning
Whole_Group_Discussion	Whole_Group_Discussion	Whole_Group_Discussion
Student Presentations	ProblemBased_Learning	Demonstrations_
Student_Peer_Assessment__	Case Study_	Case Study_
Computer_based_learning_exercise	Lab Activities_	Lab Activities_
Online_formative_quizzes	Quizzes	Student Presentations
Informal writing	Smallgroup_Student_	Quizzes
Lecture_notes_comparison sharing	Self Directed_Learning	Smallgroup_Student_
	Think Pair Share_	Self Directed_Learning
	Computer_based_learning_exercise	Student_Peer_Assessment__
	Lecture_notes_comparison sharing	Computer_based_learning_exercise
	Fieldtrips	Brainstorming
		Research projects
		Online_formative_quizzes
		Lecture_notes_comparison sharing
		Student_peer_teaching
		Campus events
		Film_video_critiques
		Roleplay
		Guest lectures
		Learning portfolio
		Fieldtrips
		Video creations

Table:4 Suitable Teaching Methods and its Association

Whole group Discussion and Lecture notes comparision sharing are the two methods, those effectiveness while using in the class were highly affected by class size, course level and course type addition to many shown in the table:4.

VII. CONCLUSION

Teaching method focused to learning outcomes stated at bloom's level providing the unerring shape to the learning journey. However choosing the best aligned with course level, class size, and course learning requirement will always remain in the hand of teachers. Out of all teaching methods employed offers various benefits in terms of students' interest, involvement, engagement and learning. However convincing students to get final outcome or learning, keep them aware and resource coherence were few challenges faced while conducting teaching. Communicating and sharing became easy through online while interaction and involvement got achieved through interactive class teaching. Referring to bloom's perspective, various teaching strategies irrespective to online or offline offered learning at each level. There is no question to adopt Innovative teaching methods anyhow at this digital and fast age where students become tech native. In my opinion blended teaching through various advanced teaching methods is the need of the hour.

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