



Criterion VI

Governance, Leadership and Management



6.5.2 Institutional reviews and implementation of teaching learning reforms facilitated by the IQAC



Institutionalization of OBE



VIMALA COLLEGE (AUTONOMOUS), THRISSUR

Institutionalization of OBE

List of trainings and workshops on OBE conducted by IQAC

Year	Title	Resource persons/ Collaborators	Date
2021-22	One week FDP on Outcome Based Education in association with ipsr solutions ltd	Dr. Mendus Jacob, MD & CEO - ipsr solutions limited, India & Valin Technologies, U.K Dr. Sunil Job K.A, Marian College, Kuttikkanam (Autonomous), Mr. Suresh Namboothiri, , Product Development Specialist Founder member - Espoir Technologies Mr. Sijo Thomas, MCA, MPhil, Ph.D Scholar, Consultant Software Architect,	17/9/2021 to 23/9/2021
2020-21	Orientation on CO & PSO Mapping for the Teaching Faculty	Dr Aneesh George, Assistant Professor, Department of Physics, Vimala College Autonomous), Thrissur	20/3/2021
2020-21	Orientation on CO & PSO Mapping	Dr Aneesh George, Assistant Professor, Department of Physics, Vimala College Autonomous), Thrissur	4/3/2021
2020-21	FEP on SWOC Analysis & Evaluation of Outcomes	Prof Harry Cleetus, Former Principal, St Albert's College, Ernakulam, Academic Consultant	10/2/2021
2020-21	FEP on Outcome Mapping and Measurement	Prof (Dr) Divya Padmanabhan, Head of Automobile Engineering, Pillai College of Engineering, Navi Mumbai	30/10/2020
2020-21	Online session on Outcome Based Education Framework-Defining & Assessing Outcomes	Prof (Dr) Divya Padmanabhan, Head of Automobile Engineering, Pillai College of Engineering, Navi Mumbai	26/8/2020
2020-21	Online Faculty Enrichment Session on Assessment Paradigms in Outcome Based Education	Dr Biju K, Asst. Professor, Department of Education, School of Education and Training, Central University of Tamil Nadu	21/07/2020
2019-20	Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Science Stream on Bloom's Taxonomy for	Mr Jineesh V P, Examination Controllers Office, Vimala College (Autonomous), Thrissur	26/07/2019

Assessment Period (2016 - 2021)



VIMALA COLLEGE (AUTONOMOUS), THRISSUR

	effective evaluation & Planning Question Banks for efficiency in evaluation		
2019-20	Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Science Stream on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation	Dr Mendus Jacob, CEO, IPSR Solutions Ltd; Kottayam	25/07/2019
2019-20	Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Arts, Commerce & Social Sciences on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation	Dr Jaya Cheriyan, Controller of Examination, Vimala College (Autonomous), Thrissur	19/07/2019
2019-20	Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Arts, Commerce & Social Sciences on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation.	Dr Sunil Job K A, Chief of Academic Solutions, IPSR Solutions Ltd; Kottayam 2) Dr Mendus Jacob, CEO, IPSR Solutions Ltd; Kottayam	18/07/2019
2019-20	Orientation Session for the Teaching Faculty on Outcome Based Education	Dr Minimol K, Vice Principal & IQAC Coordinator	17/07/2019
2019-20	One Day Workshop on Outcome Based Education (OBE) Organised in Collaboration with Kerala Higher Education Council (KSHEC).	Prof. Dr. Rajan Gurukkal P M, Vice Chairman, KSHEC, Dr Saji Mathew, Research Officer, KSHEC Dr Shefeeque V, Research Officer, KSHEC	27/06/2019
2017-18	Two Day Workshop on Outcomes & Assessment	Prof Dr N J Rao	26/10/2017 & 27/10/2017



VIMALA COLLEGE (AUTONOMOUS), THRISSUR

Summary Report

• Name of the Event: One week FDP on Outcome Based Education

Date: 17-23 September 2021

Platform: webex/ Time: 3 pm to 4.30 pm

Participants: 188

Vimala College (Autonomous), Thrissur
Under UGC NAAC Paramarsh Scheme
Organizes

One Week Faculty Development Programme on Outcome Based Education
17th to 23rd September 2021
Time: 3.00 PM IST to 4.30 PM IST

In Association With
ipsr solutions ltd
Resource Persons

Dr. Mendus Jacob, MEd., PhD.,
HOD, IPSR
Director - MCA, Marian College,
Kuttikanam (Autonomous)
Former Director of School of
Applied - Mathematics, IAS,
University
M.D. & C.E.O. - IPGR & Vaid
Technologies, USA
Academician, Entrepreneur
with 30+ years of experience

Dr. Suresh Jha, K.A. H.S., MEd, PhD,
PhD, DEd
Adjunct Faculty, Marian College,
Kuttikanam (Autonomous)
Former College Principal and an
OBE Specialist
Blogger and Resource person for
National conferences
Chief of Academic Solutions - IPGR
Academician with 25+ years of
experience

Mr. Sijo Thomas, MCA, PhD,
PhD, DEd
Former member of the education
department, minister - Kerala
Education Department
with 30 years of experience
Single offer interview for senior
positions of higher education
Head of the team that delivered
single offer for "The best"
quality into design and
developing makes for innovative
team, leading various national
conferences etc.

[CLICK HERE TO REGISTER](#)

About Vimala College (Autonomous)
Vimala College (Autonomous), Thrissur established in the year 1967 is one of the pioneering higher education institutions in India. The institution was awarded autonomy in 2005 and conferred the status of College with Potential for Excellence in 2016. The College NAAC Accredited as an A Grade Institution Five Star Status (2003) and A Grade (2008 and 2014). The College is a Mentor institution under UGC Paramarsh Scheme and also supported by AUSA II, DST-FIST, and DST STAR College Scheme.

About IPGR
Led by a team of academicians and entrepreneurs, IPGR is a public limited IT company with 30+ years of expertise in Software Product Development and Training services. During the last 2 decades, IPGR has worked with over 500 academic organisations, including Universities, Autonomous Colleges, Technical and Non-technical Institutions. IPGR conducts Faculty Development Training, Seminars, Workshops, Add-on Courses, Corporate Training and Job oriented Training in Education, IT & Non domain. IPGR's IT services division is a pioneer in development of Academic solution products that help to manage academic and operational activities like Question Paper generation, Campus Automation, Accreditation processes (NAAC, NBA etc.), OBE (Outcome Based Education) etc.

The One Week Online FDP is envisioned as a comprehensive hands on experience to empower the faculty to design and practice outcome based academic strategies with the help of advanced software solutions.

FDP Outcomes
On completion of this FDP, the faculty members will be able to:

- Identify the relevance and scope of OBE
- Formulate POs, PSOs and COs appropriately using Bloom's Taxonomy verbs
- Prepare an appropriate course design for OBE
- Compute the final grade points of COs, PSOs and POs related to the Programme
- Apply tools to prepare various analytics reports on OBE on per NAAC perspective

We earnestly solicit your presence.

Dr. S. Resha Jose, Principal
Dr. M.P. Rajas, Accreditation, Kuttikanam, Paramarsh Scheme
Dr. S. Resha T.J., Vice Principal
Dr. Mathi K.A., Vice Principal
Dr. Dhanya Johnson, IQAC Coordinator

Paramarsh Team Members: Mr. Lijo Thomas, Dr. Jatin Paul, Dr. Anesh George, Dr. Doris Jose, Mr. Anandhar P.J

There is no registration fee. Participants will be provided certificate on the successful completion of the FDP, on the basis of attendance and assignments.
For any queries, write to:
ipgrparamarsh@vimalacollege.edu.in
Or contact: 844977205, 84462000

NEP 2020 - Key Highlights

- Consolidation of more than 50,000 HEI (800 universities, 44,000 colleges, and others) into about 15,000 large, well-resourced, vibrant multidisciplinary institutions
- New and existing HEIs will evolve into two distinct categories:
 - Universities with focus on Research and Teaching
 - Colleges - Autonomous Degree Granting Colleges (ACs) - Constituent Colleges

Participants (27):

- Dr. Dhanya Jo., Co-host, MCA
- IPSR, Host
- Dr. Mendus Jacob, Co-host
- Amaldev P J, Co-host
- JAMONI KURIKIOSE, Co-host
- Leenus Kannoth, Co-host
- neethu up, Co-host
- Yashika Priyan, Co-host
- Anoop MB, Co-host

OBE- Road Ahead

Dr. Mendus Jacob
CEO, ipsr solutions limited
Professor & Director, MCA
Marian College Kuttikanam (Autonomous)

Participants (25):

- Dr. Dhanya Jo., Co-host, MCA
- IPSR, Host
- Dr. Mendus Jacob, Co-host
- Amaldev P J, Co-host
- Dr. Jatin Paul, Co-host
- JAMONI KURIKIOSE, Co-host
- Leenus Kannoth, Co-host
- neethu up, Co-host
- Yashika Priyan, Co-host
- Anoop MB, Co-host



VIMALA COLLEGE (AUTONOMOUS), THRISSUR

- **Name of the event:** **Orientation on CO & PSO Mapping**
Organised by: IQAC, Vimala College (Autonomous), Thrissur
Resource Person: Dr Aneesh George, Assistant Professor,
Department of Physics, Vimala College (Autonomous), Thrissur
Venue / Platform: Silver Jubilee Seminar Hall
Date: 20/3/2021
Time: 09.00 am to 03.00 pm
- **Name of the event:** **Orientation on CO & PSO Mapping for the Teaching Faculty**
Organised by: IQAC, Vimala College (Autonomous), Thrissur
Resource Person: Dr Aneesh George, Assistant Professor, Department of Physics,
Vimala College , Thrissur
Venue / Platform: Silver Jubilee Seminar Hall
Date: 4/3/2021
Time: 01.00 pm to 02.00 pm
No. Of Participants: 40





VIMALA COLLEGE (AUTONOMOUS), THRISSUR

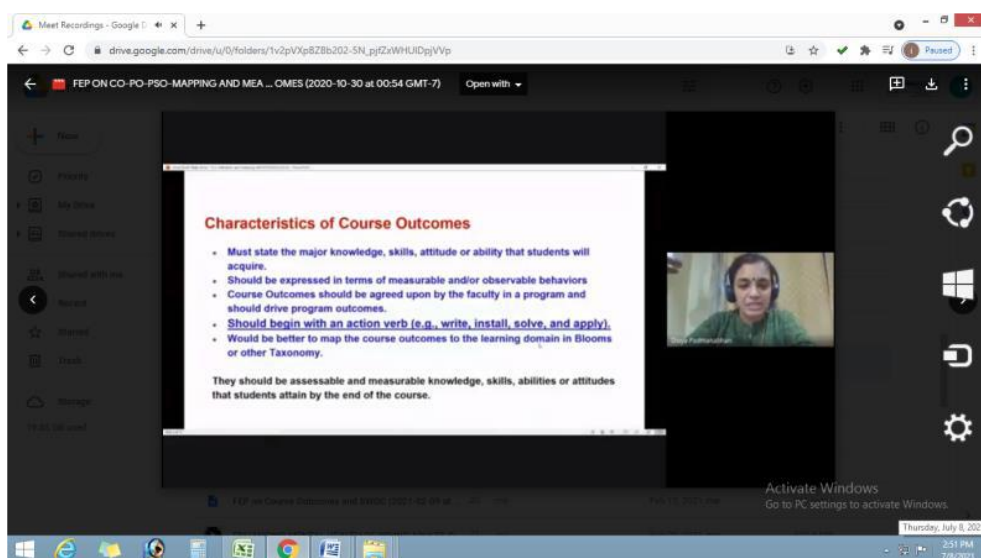
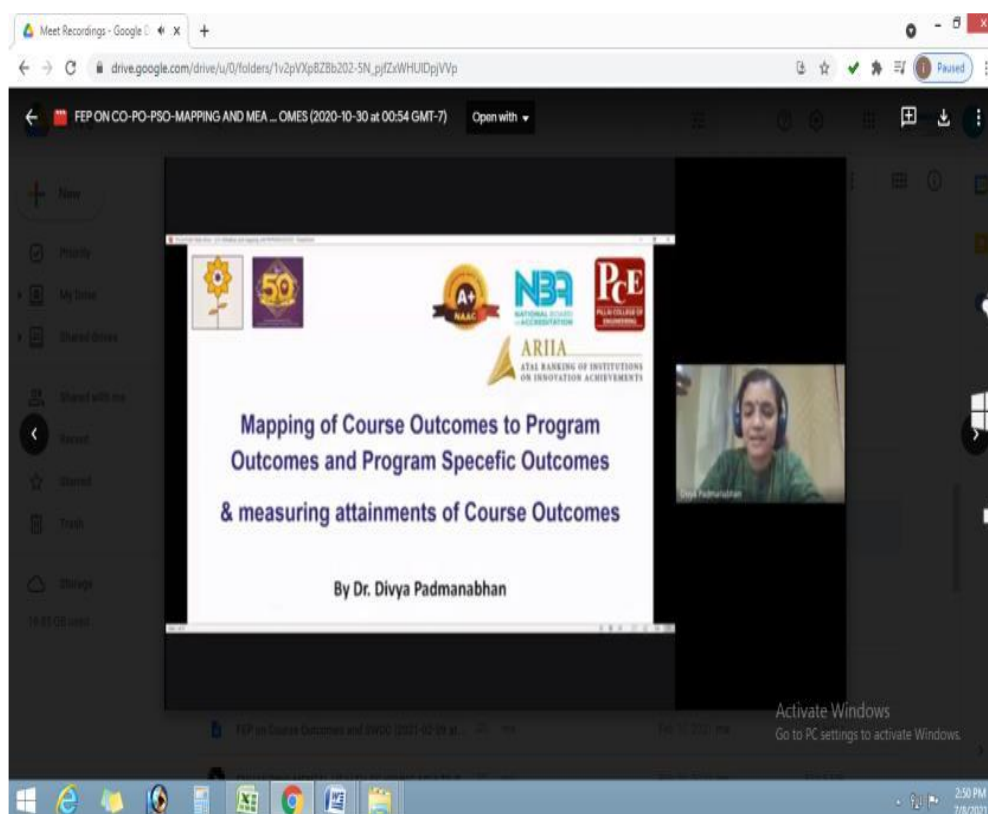
- Name of the Event: FEP on Outcome Mapping and Measurement**

Resource Person: Prof (Dr) Divya Padmanabhan,

Date: 30 October 2020

Platform: Google Meet / Time: 01.30pm to 3.30 pm

Participants: 93





Name of the Event: "Outcome Based Education Framework-Defining & Assessing Outcomes"

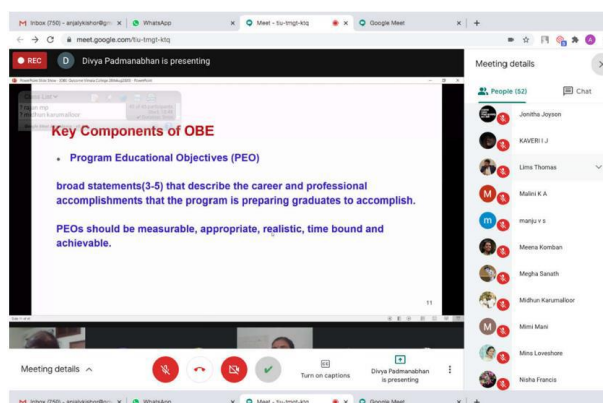
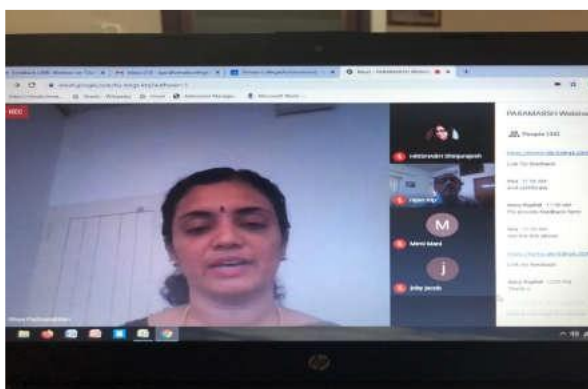
Date: 26 August 2020

Platform: Google Meet / Time: 10.00 am to 12.00 pm

Participants: 55

Report of the webinar

Dr Divya Padmanabhan, Head of Automobile Engineering, Pillai College of Engineering, Mumbai was the resource person. She emphasized the importance of restructuring our curriculum in such a manner that it improves knowledge along with skill assuring employability to young graduates of any discipline. The speaker explained the terms such as Vision, Mission, PO, PSO & PEO which helped the audience to understand the major concepts of OBE better.





VIMALA COLLEGE (AUTONOMOUS), THRISSUR

- **Name of the Event: Online Faculty Enrichment Session on Assessment Paradigms in Outcome Based Education**

Date: 21 July 2020

No. of participants: 70


Brief Report of the Event

Dr Biju K, Assistant Professor, Department of Education, School of Education and training, Central University of Tamil Nadu led an Online Faculty Enrichment Session on Assessment Paradigms in Outcome Based Education.

Google Meet Link: <https://meet.google.com/vom-mefk-nso>

FEP- Recording:


<https://drive.google.com/file/d/1CskK02K5O9TRrxBe17nQt6nALjoCGLj/view?usp=sharing>



VIMALA COLLEGE (AUTONOMOUS), THRISSUR

The education sector all across the globe is undergoing an indispensable paradigm shift - a transition from classroom learning to online learning management systems - due to the covid 19 pandemic. Currently, the most pressing concern of the faculty, irrespective of the subjects they handle, is the domain of assessment. There are challenges in ensuring the quality, equity and fairness of assessment for measuring the expected course outcomes as the target group is equally or more tech savvy. Hence a fair grasp of assessment strategies and techniques has become the need of the hour. This faculty enrichment programme aims to train our faculty to assure that they are well equipped with better understanding of various assessment strategies.

**JULY 21, 2020
TUESDAY
1.30PM TO 3.00PM**



**ASSESSMENT PARADIGMS
IN
OUTCOME BASED EDUCATION**

Please confirm your participation


**Dr Sr Beena Jose
Principal**

**Dr Minimol K Jose,
IQAC Coordinator**

**Ms. Divya C D, Ms Jilu Varghese
Coordinators,
Faculty Enrichment**

[Click here to register](#)

**ONLINE FACULTY ENRICHMENT
SESSION ON
ASSESSMENT PARADIGMS
IN
OUTCOME BASED EDUCATION**



RESOURCE PERSON
Dr Biju K
Assistant Professor,
Department of Education,
School of Education and
Training,
Central University of
Tamil Nadu



- **Name of the Event: Orientation Session on Question Bank Planning & Preparation**

Date: 26 July 2019

Venue: Marian Hall

No. of participants: 52

Brief Report of the Event

Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Science Stream on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation by Mr. Jineesh V P, Examination Controller's Office, Vimala College (Autonomous), Thrissur was organised by IQAC

- **Name of the Event: Orientation Session on Question Bank Planning & Preparation**

Date: 25 July 2019

Venue: Marian Hall

No. of participants: 62

Brief Report of the Event

Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Science Stream on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation. Resource Persons for the day was Dr Mendus Jacob, CEO, IPSR Solutions Ltd; Kottayam.





VIMALA COLLEGE (AUTONOMOUS), THRISSUR

- **Name of the Event: Orientation Session on Question Bank Planning & Preparation**

Date: 19 July 2019

Venue: Marian Hall

No. of participants: 49

Brief Report of the Event

Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Arts, Commerce & Social Sciences on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation by Dr Jaya Cheriyan, Controller of Examination, Vimala College (Autonomous), Thrissur.





VIMALA COLLEGE (AUTONOMOUS), THRISSUR

- **Name of the Event: Orientation Session on Question Bank Planning & Preparation**

Date: 18 July 2019

Venue: Marian Hall

No. of participants: 62

Brief Report of the Event

Orientation Session on Question Bank Planning & Preparation for the Teaching Faculty of Arts, Commerce & Social Sciences on Bloom's Taxonomy for effective evaluation & Planning Question Banks for efficiency in evaluation. The key resource persons of the day were Dr Sunil Job K A, Chief of Academic Solutions, IPSR Solutions Ltd; Kottayam, Dr Mendus Jacob, CEO, IPSR Solutions Ltd; Kottayam.





- **Name of the Event: Orientation Session for the Teaching Faculty on Outcome Based Education**

Date: 17 July 2019

Venue: Silver Jubilee Seminar Hall

No. of participants: 27

Brief Report of the Event

Orientation Session for the Teaching Faculty on Outcome Based Education by Dr Minimol K, Vice Principal & IQAC Coordinator.





VIMALA COLLEGE (AUTONOMOUS), THRISSUR

- **Name of the Event: One Day Workshop on Outcome Based Education (OBE)**

Date: 27 June 2019

Venue: Silver Jubilee Seminar Hall

Collaboration : Kerala Higher Education Council (KSHEC)

No. of participants: 50

Brief Report of the Event

Workshop Concept:

In the era of globalization, traditional education system is losing its relevance. In today's world, everything changes very rapidly and continuously. More skills are required to work with very fast developing technology. The educational institutions should produce graduates to cope with technological development. Thus to overcome the requirement, it is mandatory to shift from traditional education system to Outcome Based Education (OBE), which includes Program Outcomes (PO), Program Specific Outcomes (PSO), and Course Outcomes (CO).

OBE is a comprehensive approach to organizing and operating a curriculum that is focused on and defined by the successful demonstrations of learning sought from each learner. The term clearly means focusing and organizing everything in an education system around "what is essential for all learners to be able to do successfully at the end of their learning experiences". OBE ultimately implies emerging with a vivid idea of what is important for learners to be able to do (determining the outcomes), thereafter developing the programmes for learning, implementing it and assessing the learner on a continuous basis to ensure that learning has ultimately taken place. The outcomes-based approach to education requires developing a clear set of outcomes organized into the system's subjects and establishing conditions and opportunities within the system to enable and encourage learners to achieve these outcomes.

Considering the importance and relevance of OBE, the IQAC of Vimala College (Autonomous) conducted a two-day workshop for the faculty in October 2017. The outcomes of each course were formulated under the guidance of Dr NJ Rao, the resource person. The KSHEC insisted the college to organize refresher session to update the knowledge regarding OBE and sensitize the newly recruited faculty, IQAC members and the chairpersons of all Boards of Studies. The resource persons of the day were Prof. Dr. Rajan Gurukkal P M, Vice Chairman, KSHEC, Dr Saji Mathew, Research Officer, KSHEC and Dr Shefeeque V, Research Officer, KSHEC.



VIMALA COLLEGE (AUTONOMOUS), THRISSUR





- **Name of the Event: FEP: Two-Day Workshop on Outcomes & Assessment**

Date: 26 & 27 October 2017

Venue: Silver Jubilee Seminar Hall

No. Of Participants: 35

Brief Report of the Event

Workshop Concept:

Good teachers want good learning to occur as a result of their teaching. Good learning means, besides recalling information, acquiring the ability of problem solving, and critical and creative thinking. Good learning takes place when

- students are provided the course outcomes (what the students should be able to do at the end of the course), information on their responsibilities, and the criteria used to evaluate their performance
- the assessment is in alignment with the stated outcomes
- instructional activities are designed and conducted to facilitate them to acquire the stated outcomes and they are actively engaged and challenged at the right level

All courses in a general higher education programs in India need to be designed and conducted to facilitate the program to meet the identified Program Outcomes and Program Specific Outcomes identified by the Department. The workshop aims at facilitating the participants to write course outcomes of courses of their choice in NAAC Accreditation framework, and design assessment in alignment with course outcomes.

Workshop Outcomes:

- WO1. Understand OBE and CBCS of UGC, and choose Program Outcomes and write Program Specific Outcomes (PSOs) for a specific program
- WO2. Understand the taxonomy of learning
- WO3. Write course outcomes for a selected course
- WO4. Understand the key concepts of educational assessment
- WO5. Design assessment items in alignment with course outcomes of the selected course

Prof Dr N J Rao was the resource person for the session.



VIMALA COLLEGE (AUTONOMOUS), THRISSUR





- OBE was implemented across all programmes and all courses at all level
- Well framed Course outcome, [Programme Specific Outcome and Programme Outcome](#) and displayed in the website
- VMAP [Vimala- Method of Measuring Attainment of Programme Outcomes]
 - Indigenous programme developed by the College aids mapping of POs, PSOs and COs as well as outcome attainment of each student



Extract of outcome attainment report-Sample

**REPORT ON THE STUDY ON
ATTAINMENT OF PROGRAMME
AND COURSE OUTCOME**

2017-20 UNDER GRADUATE BATCH



Vimala College (Autonomous), Thrissur
Dr. Aneesh George, Dr. Jerin Paul & Dr. Lakshmi CM



Preface

“An outcome is a culminating demonstration of learning: it is what the student should be able to do at the end of the course” (Spady 1993). OBE is an approach to education in which decisions about the curriculum are driven by the learning outcomes that students should display at the end of the course. These decisions include curriculum content, educational strategies, student selection and assessment. This approach is important and corresponds with the global education concept rather than the traditional pedagogical teaching. This is to ensure each of the programmes is able to generate a holistic, successful student in the academic field and magnificent human capital.

This report contains a detailed study on the course and programme outcome attainment of the 2017-20 under graduate batch of Vimala College (Autonomous), Thrissur. 2017-20 batch is the second output of Vimala after crowning the position of Autonomy. This report is intended to identify the level of attainment of different outcomes. The attainment scores are calculated based on internal, external and mapping between course outcome and programme outcome. Anemrical and descriptive study results are provided with its interpretation and conclusion.

We are thankful to the management, Principal, Vice principals, Controller of examinations, IQAC and to all staff members, those who helped to compile the data from the ground zero to the final mode.

Dr. Aneesh George

Dr. Jerin Paul

Dr. Lakshmi C M

June 2021



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Introduction

Outcome-Based Education (OBE) is a student-centric academic method that can measure student's performance in step by step and incorporate the supportive action to improve the knowledge and skill levels. It helps the student to improve the learning outcomes, acquire additional skills and finally able to equalize with global education. Also it helps the institution measure the learning outcome, improve the course delivery, include additional assessment method and modify the curriculum planning and design to achieve above the benchmark outcome level, become global educator.

Important terminology Outcome Based Education

Course: course is defined as a theory, practical, project or viva-voce subject studied and assessed in a semester.

Course Outcome (CO): course outcomes are precise statements that describe a learner have achieved at the end of a course.

Programme: programme is defined as the discipline of a Degree.

Programme Outcome (PO): Program outcomes are finer statements that describe a learner are expected to be able to do by the time of programme.

Programme Specific Outcomes (PSO): Programme Specific Outcomes are the additional ability or skills that a learner should be acquire to do at the time of programme with reference to POs.

Vimala College (Autonomous), a first grade women's College under the CMC Management, was established in 1967 in Thrissur District, Kerala. The College currently offers 19 Undergraduate and 13 Postgraduate programmes and is Centre for Research in English, Commerce, Physics, Economics and Social Work. In 2017-20 batch undergraduate, 16 programmes have pass out students. After completion of any one of the undergraduate programme, Vimala College set the programme objectives to students would have gain.

Programme Outcomes

"Program Outcomes are statements that describe what students are expected to know and able to perform or attain by the time of graduation. These relate to the skills, knowledge, and behavior that students acquire through the programme." (EAC Manual 2007). Program Outcomes for the 2017-20 Undergraduate batch of Vimala College Autonomous are



- ❖ Acquired good subject knowledge
- ❖ Cultivated an intellectual curiosity and love for learning
- ❖ Established a sound foundation for higher learning
- ❖ Comprehended the nuances of research
- ❖ Attained language skills and ability for effective communication
- ❖ Obtained problem solving and analytical skills
- ❖ Ability to function in multidisciplinary domains
- ❖ Imbibed sound values and principles
- ❖ Capability to apply knowledge and learning for environmental sustenance
- ❖ Ability to collaborate for common good and social welfare

Procedure

The CO, PO and PSO attainment calculation for the undergraduate programmes is prepared using the direct and indirect method of evaluation. The indirect method involves exit survey and the direct mechanism includes two components like internal component and semester end exam mark. The internal component comprises of two internal exam marks, seminar or viva, assignment and attendance. For some courses the direct mechanism involves only course end exam mark. Each department can avail the marks for all these components from the Controller of Examination. The department committee chaired by the Head of the Department will construct a CO, PO, PSO mapping based on four parameters for each of their core courses, common courses, language and complementary courses. The four parameters encompasses components like explain, demonstrative, can be analysed and meet the requirement. The CO-PO mapping of the language and complementary courses will be forwarded by the respective department to the other departments. The department committee can decide upon the CO-PSO mapping of their respective courses according to the above four parameters. The departments generate the CO-PO and CO-PSO of the core courses mandatorily along with the course code and course title. It is the responsibility of the tutors to collect the exit survey of the outgoing batches. The questionnaire consists of questions related to POs. The batch wise average of the average feedback score is converted to a percentage and mapped to a 4 point scale based on the criteria:- 80% and above - 3, 70% to 80% - 2, 60% to 70% - 1 and Below 60% - 0.

Since the entire internal and external component involves activity to all CO mapping, a maximum of 3 weightage will be assigned to each. The marks of the direct internal and direct external component of each student are converted to the 4 point grade scale based on the activity to CO mapping weightage. The final direct component comprises of 20% of the direct internal and 80% of direct external component. The final CO attainment comprises of 20% of indirect and 80% of direct component. The attainment level of PO



and PSO is calculated based on the final CO attainment score and the weightage is set by the department in relation to their PO and PSO. The average attainment of PO and PSO of each student is calculated course wise, semester wise, year wise and programme wise. The statistical analysis of PO and PSO attainment will also be performed. The college sets the benchmark of attainment for activity to CO, CO to PO and CO to PSO as 60%. Corrective measures will be taken for each of the courses that falls below the benchmark.

Methodology

Statistical methodologies are utilized to extract information from the data set. The main techniques involve Descriptive statistics, Correlations (Spearman's rank), Kruskal Wallis test and some graphical representations. The following subsections will provide a brief account of technique used.

Descriptive Statistics: The basic descriptive statistics used in this works are Mean, Median, Standard deviation. It will dispense the information on the central tendency and dispersion measure about the data.

Correlation: In statistical terms the correlation denotes the association between two quantitative variables. It also assumes that the association is linear, that one variable increases or decreases a fixed amount for a unit increase or decrease in the other. The correlation coefficient is measured on a scale that varies from + 1 through 0 to - 1. Complete correlation between two variables is expressed by either + 1 or -1. When one variable increases as the other increases the correlation is positive; when one decreases as the other increases it is negative. Complete absence of correlation is represented by 0. A general interpretation for the relation based on the coefficient is 0 to 0.3 – no correlation, 0.3 to 0.5 – mild correlations, 0.5 to 0.7 – moderate correlations and 0.7 to 1 – strong correlations.

Scatter Diagram: scatter diagram helps to identify whether there is a relationship between any two set of variables. The vertical scale represents one set of measurements and the horizontal scale the other. One variable is plotted on the horizontal axis and the other is plotted on the vertical axis. The pattern of their intersecting points can graphically show relationship patterns. When the data are plotted, the more the diagram resembles a straight line, the stronger the relationship.

Box Plot: A boxplot, also called a box and whisker plot, is a way to show the spread and centers of a data set. It also displays a five-number summary of a set of data. The five-number summary is the minimum, first quartile, median, third quartile, and maximum. In a box plot, a box will be drawn from the first quartile to the third quartile. A vertical



line goes through the box at the median. The whiskers go from each quartile to the minimum or maximum.

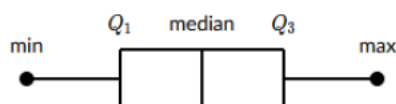


Figure 1. Box and whisker plot

Kruskal Wallis test: The Kruskal-Wallis test by ranks, Kruskal-Wallis H rank or one-way ANOVA on ranks is a non-parametric method for testing whether samples originate from the same distribution. It is used for comparing two or more independent samples of equal or different sample sizes. The parametric equivalent of the Kruskal-Wallis test is the one-way analysis of variance (ANOVA). A significant Kruskal-Wallis test indicates that at least one sample dominates one other sample. The test does not identify where this stochastic dominance occurs or for how many pairs of groups stochastic dominance obtains. It is a non-parametric method, the Kruskal-Wallis test does not assume normal distribution of the residuals, unlike the analogous one-way analysis of variance.

Programme Outcome Attainment

This section discusses the attainment level of PO by the students of 2017-20 undergraduate batch of Vimala College Autonomous, Thrissur. Separate analysis is performed at institutional level and programme level to identify the student's attainment of PO at each level.

The institutional level analysis concludes that an average attainment of 71.61% of the PO is earned by 2017-20 undergraduate batches. Specifically considering the average attainment on the basis of year, it is established that it significantly varies (KW Test - P Value < 0.05) and it has an increasing trend (First Year – 69.23, Second Year – 71.78, Third Year – 73.83). The same thing is verified over semesters and it has the same trend of results. The maximum attainment is happened at the sixth semester and it is approximately 75%. Details of the analysis and the graphical representations are given figure 2 and 3.

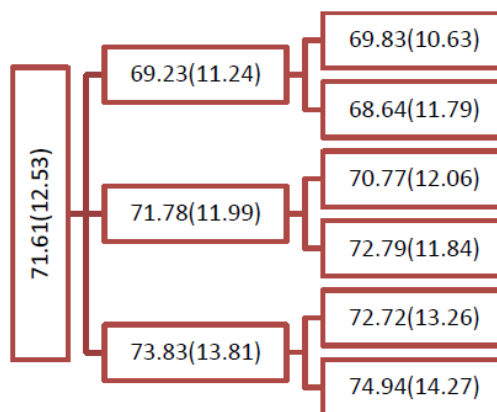


Figure 2. Average PO attainment at overall, year and semester

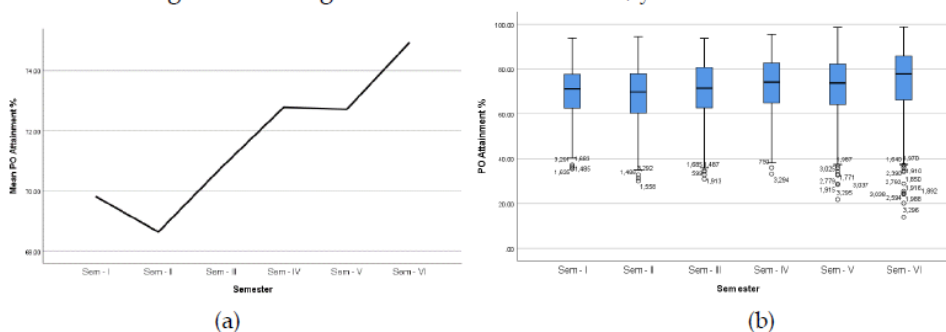


Figure 3. Semester wise PO attainment (a) Mean and (b) Box and whisker plot

Table 1. Attainment over different statistical test

Test	Year		Semester	
Kruskal Wallis Test	Test Statistic (df)	P Value	Test Statistic (df)	P Value
	120.90 (2)	<0.000	151.741 (5)	<0.000
	Department			
Kruskal Wallis Test	Test Statistic (df)		P Value	
	747.713 (15)		<0.000	

The analysis reported that the average PO attainment is varying in between various programmes in the Institution. So a detailed account of the average attainment of PO of each of the programmes is conducted. The results of the same are tabulated in table 2.

Pages 8-51 of attainment report not included here.....

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Programme Specific Outcome attainment

Programme specific outcome attainment only analyzed in the programme level. Each programmes contain first and second language and complimentary courses at its I to IV semester. In V semester, one open course, which provide flexibility to student to select from a common pool of courses offered by different departments. These courses are not handled by the core department in order to create the CO to PSO weightage. But core department have the provision to provide weightage to corresponding to CO to PSO. Number of PSO is varied in different programmes generate an ambiguity for attainment calculation at institution level and comparison of inter programme level. Therefore detailed statistical test not perform on PSO attainment. Average percentage of overall PSO of different programmes is tabulated in table 21.

Table 21. Average percentage of overall PSO

Programme	Overall PSO percentage	Programme	Overall PSO percentage
Botany	85.19	Home Science FCS	78.93
Chemistry	80.34	Home Science TXT	73.14
Commerce Regular	72.66	Malayalam	71.71
Commerce Self	66.06	Mathematics	74.74
Computer Science	76.08	Physics	75.45
Economics	61.56	Sociology	65.11
English	69.93	Statistics	75.79
English Functional	69.45	Zoology	79.83

Conclusion

The analysis was conducted to study the attainment of Programme Outcome, Programme Specific Outcome and Course Outcome of the 2017-20 under graduate batch of Vimala College (Autonomous), Thrissur. In which the Programme specific outcome analysis was not completed because of the lack of data uniformity. The rest of the two are analyzed and interpreted. Along with specific analysis of external score and internal score of the same batch is analyzed and its inter relations are identified.

The average attainment of Programme Outcome at the institutional level is 71.61% and an increasing trend is established in the attainment from the first to third year. Programmes of Commerce (Regular and Self), Physics and Functional English do not vary in the average attainment of PO over Years and Semesters. This means that these programmes keeping an approximately constant level of average PO attainment over the



years and Semesters. Programmes of computer science have significantly same level of average PO attainment over years but not in Semesters. All other programmes have significantly different level of attainment at different years and different semesters.

The average CO attainment at institutional level is 2.2117 (73.72%) out of 3. It is interesting to see that the attainment level is increasing year by year on a constant level. The semester wise attainment level is also showing approximately increasing trend. The test results that only commerce (self) and mathematics programmes have approximately similar CO attainment over years and at the same time their scores are varying over semester. All other programmes have different level of attainment score for CO.

The average attainment of external score at institutional level is calculated as 2.05 (68.47%) out of 3. The attainment score is increasing slightly at each semester and the same trend can be observed for year wise average scores. Except commerce (self) at year wise all others have significant difference is established.

The institutional level average internal score is 2.52 (84%) out of 3. It is also clear that year wise average internal score has an increasing trend. The same trend can be observed for the semester except for a slight fall at the second semester. Commerce (Regular) and economics programmes have approximately constant level of internal scores are given to the students over semester and year wise. English programme does not possess difference in the average internal score over years and similarly English functional programmes do not have significant difference in internal score. All other programmes have significant difference in internal score over years and over semesters.