



RAMCO INSTITUTE OF TECHNOLOGY

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Accredited by NAAC & An ISO 9001: 2015 Certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

Academic Year 2022 – 2023 (Even Semester)

Department of Mechanical Engineering

Extra Mural Lecture Series – INT 12

Sl. No.	Contents	Details
01.	Title of the programme	Integrating the CDIO Principles through Effective Teaching-Learning Activities
02.	Programme Theme	Curriculum Design / CDIO framework
03.	Programme Type	Online lecture about re-design an existing curriculum with the CDIO framework.
04.	Details of resource person	Dr. JOIE D. CATAYTAY Program Head, MSE-LAWREAT University of Southeastern Philippines (USEP) Tagum-Mabini Campus Apokon, Tagum City, Davao del Norte, Philippines
05.	Mode & Venue / Platform	Google Meet / http://meet.google.com/sfc-jeff-xff
06.	Date & Duration	29.02.2024 (Tuesday) IST: 10.30 AM / PST: 01.00 P.M & 1 hour
07.	No. of Student Participants	60
08.	No. of Faculty Participants	25
09.	No. of External Participants	Nil
10.	Expenditure amount (if any)	NA
11.	Social Media URL	Nil
12.	Video URL (if any)	Nil

13. Objective of the Programme:

The primary objective of Dr. Cataytay's session was to elucidate the CDIO framework and demonstrate how it can be effectively integrated into engineering curricula through engaging teaching-learning activities. The session aimed to empower educators with practical strategies for fostering active learning, problem-solving skills, and teamwork among engineering students.

14. Detail description of the activity:

CDIO Framework: Dr. Cataytay provided an in-depth overview of the CDIO framework, emphasizing its four key phases: Conceive, Design, Implement, and Operate. The framework serves as a holistic approach to engineering education, integrating project-based learning, real-world applications, and professional skills development.

Active Learning Strategies: The session highlighted various active learning strategies, such as project-based assignments, case studies, simulations, and hands-on experiments, to promote student engagement and deeper understanding of engineering concepts.

Problem-Solving Skills: Dr. Cataytay underscored the importance of developing problem-solving skills among engineering students and demonstrated how the CDIO framework facilitates the cultivation of critical thinking, analytical reasoning, and creative problem-solving abilities.

Teamwork and Collaboration: The CDIO principles advocate for collaborative learning environments where students work in teams to tackle complex engineering challenges, fostering effective communication, leadership, and interpersonal skills.

Effective Teaching-Learning Activities:

Dr. Cataytay shared a range of effective teaching-learning activities designed to integrate the CDIO principles into engineering education, including:

Project-Based Assignments: Engaging students in hands-on projects that simulate real-world engineering scenarios, encouraging them to apply theoretical knowledge to practical problems.

Design Challenges: Presenting students with design challenges or competitions that require them to conceptualize, prototype, and optimize engineering solutions within specified constraints.

Industry Partnerships: Collaborating with industry partners to provide students with experiential learning opportunities, internships, and mentorship programs that bridge the gap between academia and industry.

Cross-Disciplinary Collaboration: Encouraging interdisciplinary collaboration among students from different engineering disciplines to tackle multifaceted engineering problems and gain exposure to diverse perspectives.

Implications and Applications:

The integration of CDIO principles through effective teaching-learning activities has significant implications for engineering education, equipping students with the skills, knowledge, and mindset required to excel in the engineering profession. By fostering a student-centered approach to learning and emphasizing practical applications, educators can prepare graduates who are innovative, adaptable, and well-equipped to address the complex challenges of the 21st century.

15. Banner / Flyer of the programme:



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North vengannallur Village, Rajapalayam - 626 117
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Department of Mechanical Engineering

EXTRAMURAL LECTURE SERIES(ELS) - INT012

INTEGRATING THE CDIO PRINCIPLES THROUGH EFFECTIVE TEACHING-LEARNING ACTIVITIES

CDIO Member



Dr. JOIE D. CATAYTAY

Program Head, MSE-LAWREAT
University of Southeastern Philippines (USEP)
Tagum-Mabini Campus
Apokon, Tagum City, Davao del Norte,
Philippines 8100, USA

Date :February 29, 2024
(Tuesday)

IST: 10.30 A.M to 11.30 P.M.
PST: 01.00 P.M.

CONVENOR
DR.V.SIVA KUMAR
ASSOC. PROF./MECH

PATRON
DR.S.RAJAKARUNAKARAN
VICE PRINCIPAL & HEAD /MECH

CHIEF PATRON
Dr.L.GANESAN
PRINCIPAL

16. Programme Screenshots:

The screenshot shows a Google Drive link to a presentation titled "EL5001-INTEGRATED CURRICULUM DESIGN & IMPROVEMENT USING CDIO SYLLABUS AND CDIO STANDARD 2-5". The presentation slide is titled "Excellent Curriculum" and contains a flowchart illustrating the process of curriculum design and improvement using CDIO principles. The flowchart starts with "Identify Opportunities/Challenges/Future of work/Changing time competencies", leading to "Program Outcome (K, S, A) Graduate Attributes", which then leads to "Integrated Curriculum" (1 introductory course, 2 design-build courses). A box on the right lists CDIO standards: Standard 2 - CDIO Syllabus Outcome, Standard 3 - Integrated Curriculum, Standard 4 - Introduction to Engineering, and Standard 5 - Design-Build Experiences. A video feed of a speaker is visible on the right side of the presentation.

EL5001-INTEGRATED CURRICULUM DE _ K: (2023-11-16 13:01 GMT+5:30) Open with

drive.google.com/file/d/1sh2UP-wY3qIQ6G3W-RQEnuupugmp-/view

STEEP Trends Analysis to understand external forces for change

STEEP Analysis

- Social and Demographic**: Health consciousness, population growth rate, age distribution, career attitudes, safety emphasis
- Technology**: R&D activities, Automation, Technology innovation, Technological change rate
- Economy**: Economic growth, interest rate, exchange rate, Inflation rate
- Environment and Nature**: Ecological and environmental aspects (weather, climate change, global warming, etc.)
- Political and Legal**: Laws, trade restrictions, Tariffs, Political stability

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09-03-2024

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Extramural Lecture Series - ELS002 on
"Integrating the CDIO Principles Through
Effective Teaching- Learning Activities ",
February 29, 2024 (Thursday) IST: 10.30
A.M.

72 responses

[Publish analytics](#)



D.Karthik Prabhu

A S Vigneshwar

Sakthi Priya G

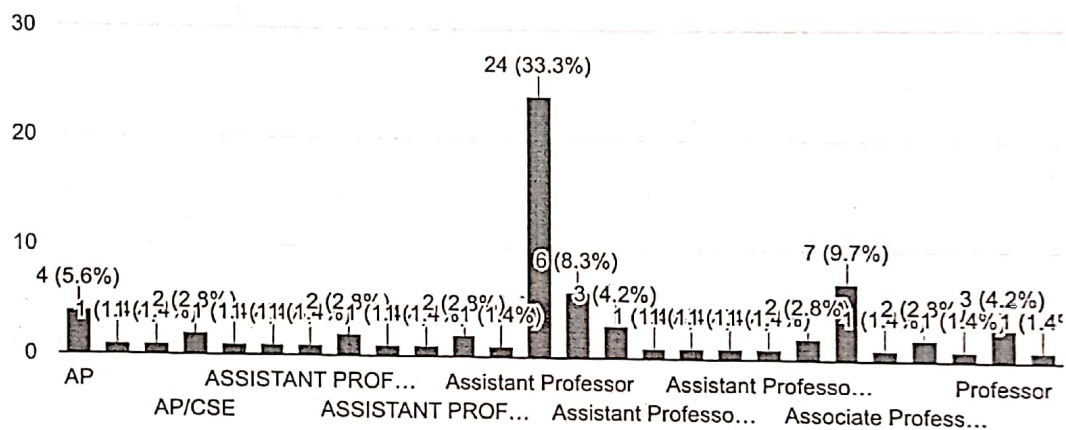
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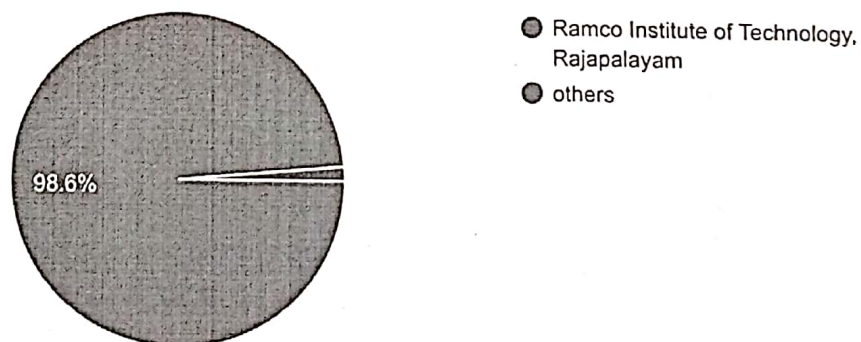
72 responses



Institution/ Organisation name

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72 responses



karthikprabhu@ritrjpm.ac.in

viigneshs@ritrjpm.ac.in

sakthipriya@ritrjpm.ac.in

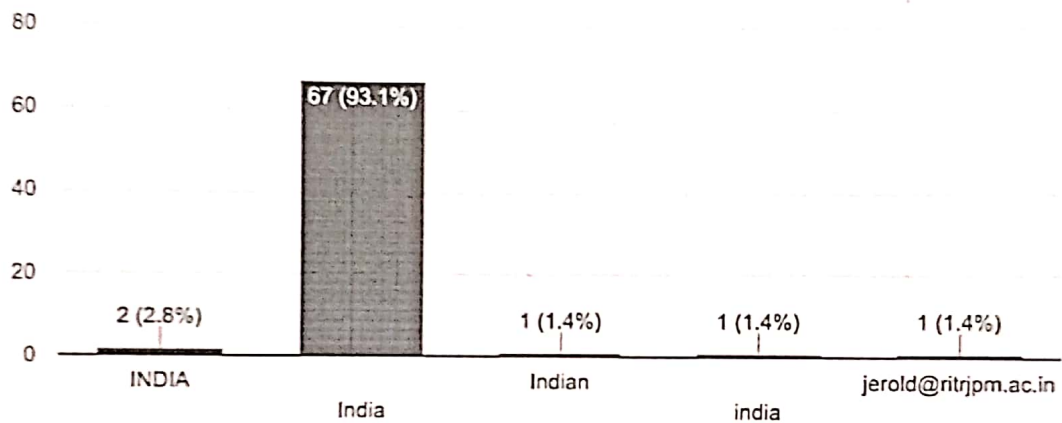
subramanian@ritrjpm.ac.in

leemamargret@ritrjpm.ac.in

Country

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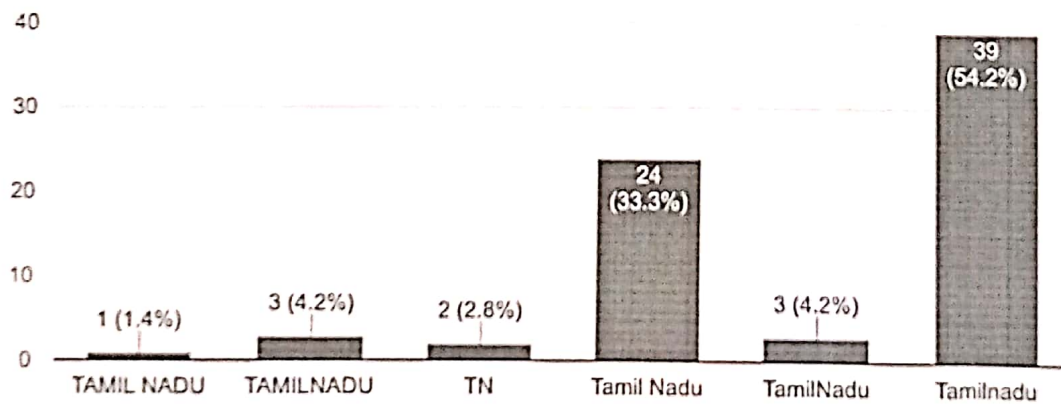
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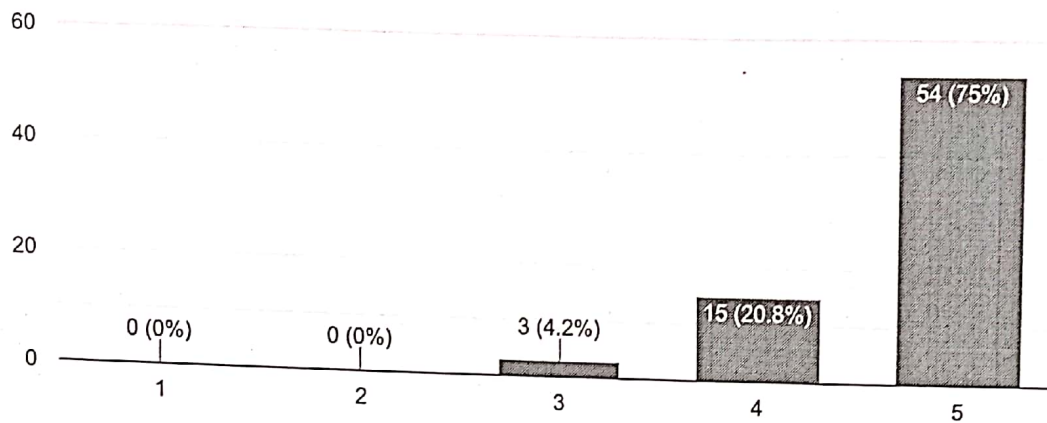
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The webinar Provided me with valuable information regarding the theme

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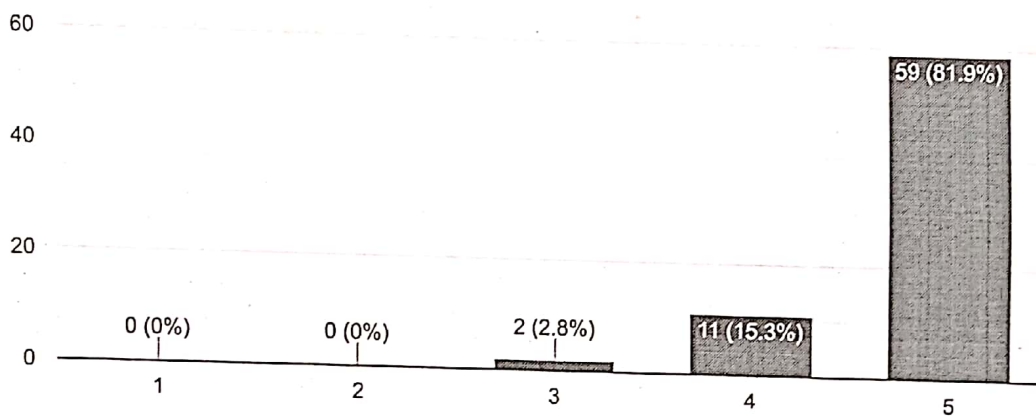
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The content delivered by resource person was useful

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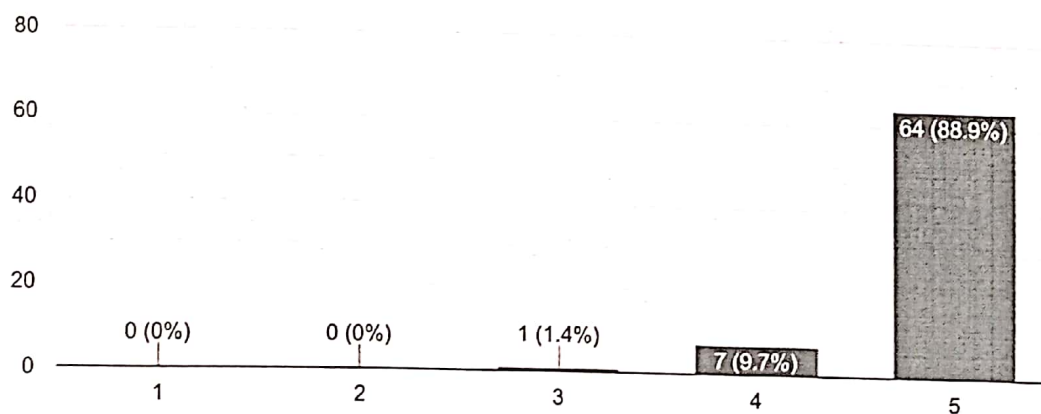
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The technological support was strong enough to execute webinar smoothly

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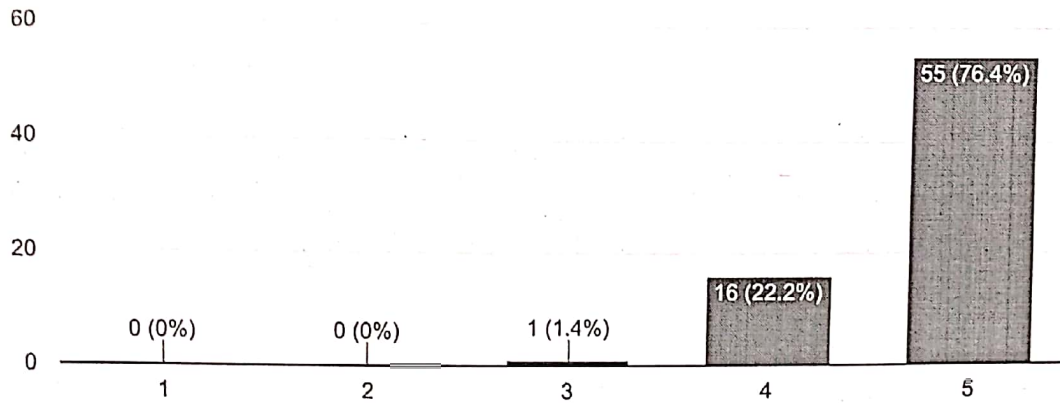
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Rate the duration of webinar

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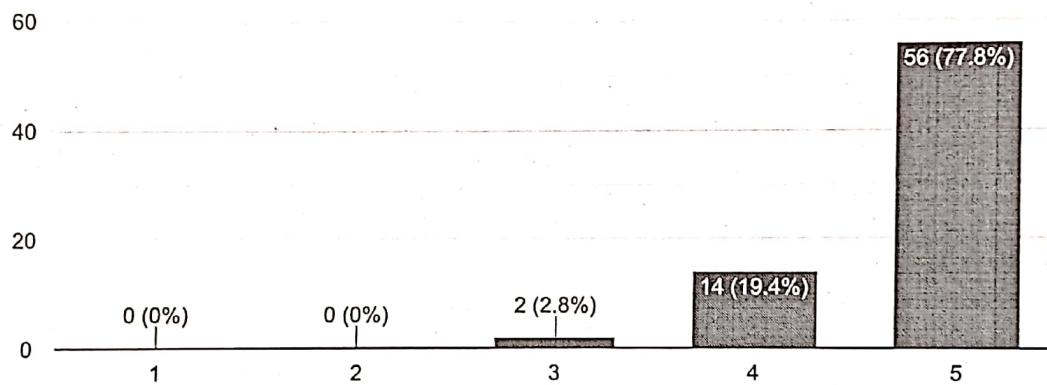
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Interaction / Q&A with the resource person

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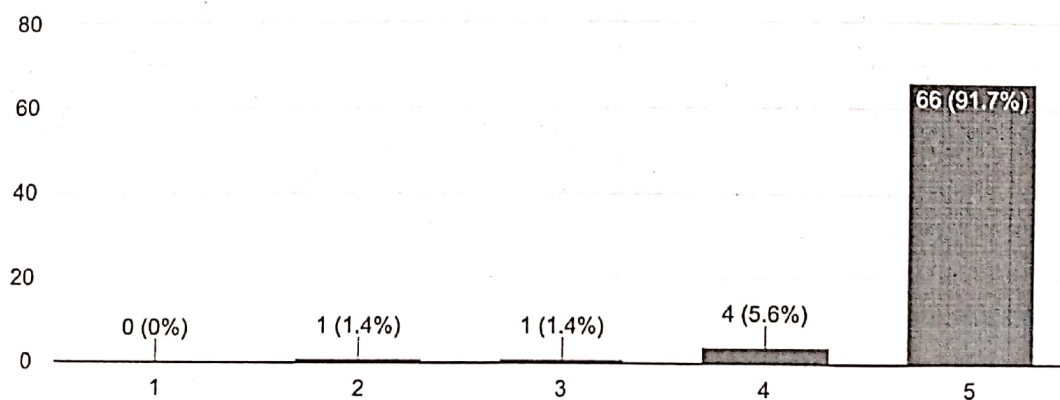
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Webinar Video Quality

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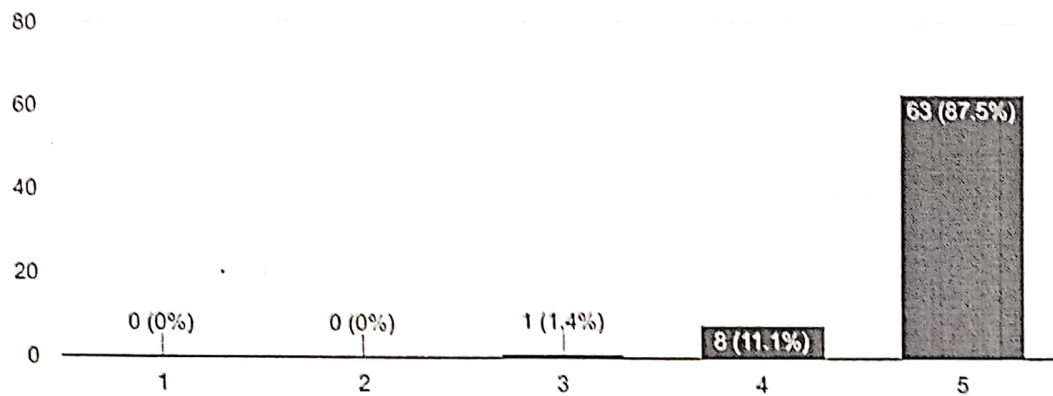
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Continuity in streaming

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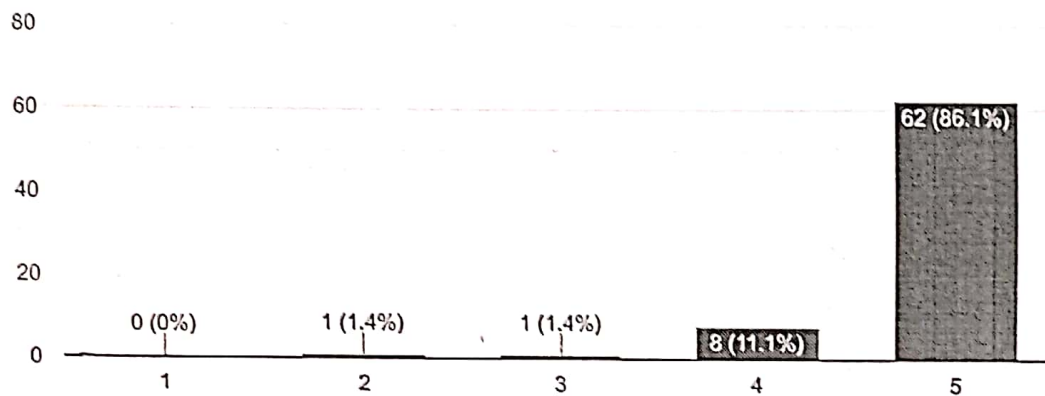
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Rate the timely communication in all aspects of the program

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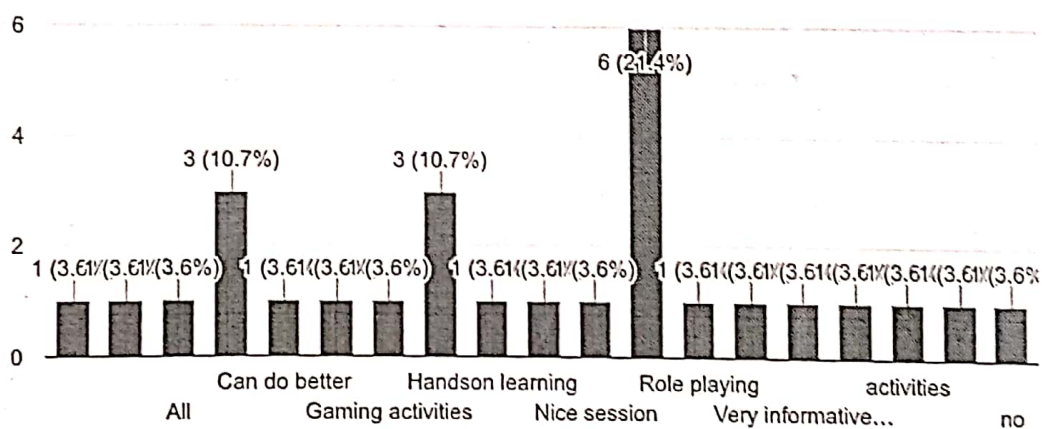
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Any specific topic which you liked very much

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28 responses



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