

A Report on
Five Days Faculty Development Program on
“Research Methodology and Research Writing: An Icebreaking Discussion”
Organised by
Department of Physics
from 20.01.2025 to 24.01.2025.

Report Submitted by: Dr. Agnibha Das Majumdar, Assistant Professor, Department of Physics.

Resource Person Details: Dr. Neha Munjal, Love Professional University, Punjab, Dr. Shiv Singh, Symbiosis International University, Pune; Dr. Mir Aaliya, Government Degree College, Kashmir; Dr. Dharavat Nagaraju, SR University, Warangal; Dr. Jaya Gupta, GNA University, Punjab; Dr. Sonali Roy, IISER, Kolkata; Dr. Sabuj Bhattacharya, Institute for Stem Cell Science and Regenerative Medicine, Bangalore; Dr. Sabuj Bhattacharya, Institute for Stem Cell Science and Regenerative Medicine, Bangalore; Dr. Kirti Bhagirath Government College, Ropar, Punjab.

Mode of Conduct: Online

Report Received on 12.02.2025.

About the Theme:

Equip participants with a robust understanding of various research methodologies, techniques, and tools. Develop competencies in selecting appropriate research designs, data collection methods, and analytical techniques. Improve the quality of research output by fostering a systematic approach to problem identification, hypothesis formulation, and data analysis. Encourage interdisciplinary research practices for impactful results. Train participants in writing effective research papers, theses, and dissertations. Familiarize them with academic publishing standards, citation styles, and ethical practices, including plagiarism prevention. Provide guidance on preparing manuscripts for high-impact journals and conference presentations. Offer tips on responding to peer reviews and managing rejections constructively. Foster networking among faculty and researchers to enable collaborative and multidisciplinary research initiatives. This FDP aims to empower educators and researchers to contribute effectively to academia and the broader knowledge community.

About Registration:

We got “**blockbuster response of 500 registration across the India**”. From 24 different states participants has registered. The data has shown below:

- The brochure and registration link shared to various active groups belonging to academic and research. This gives us good motivation and starting the FDP with high energy.
- The various types of audience like research scholars, early carrier researchers, young faculty, senior professors, experienced people shown interested to learn and explore about latest developments in research methodology.

The program is scheduled as given below with the list of speakers. Each day two eminent speakers from various reputed institutions who have very good and proved experience in the research methodology were selected to deliver lectures. Each talk has limited to 1-hour to 2-hour duration including discussions.

Program Schedule

S. No.	Speaker Name	Title of the talk	Date and Time
		Inauguration of FDP	20th January, 2025, 09:30 AM
1	Dr. Neha Munjal, Love Professional University, Punjab	Introduction to Research Methodology	20th January 2025, 10:00 AM -12:00 Noon
2	Dr. Shiv Singh, Symbiosis International University, Pune	Compiling References/ Bibliography, Submission, Peer Review and Revision	20th January 2025, 02:00 PM -04:00 PM
3	Dr. Mir Aaliya, Government Degree College, Kashmir	Content Analysis and Formulation of Good Manuscript	21st January 2025, 10:00 AM -12:00 Noon
4	Dr. Jaya Gupta, GNA University, Punjab	Problem Identification and Formulation, Research Gap Formulation	21st January 2025, 02:00 PM -04:00 PM

5	Dr. Rameesa Jan, Government Degree College, Kashmir	Sampling data Collection, Application of SPSS for Data Analysis (Quantitative Data Analysis)	22nd January 2025, 10:00 AM -12:00 Noon
6	Dr. Dharavat Nagaraju, SR University, Warangal	Graph and Figure Formulation using different Softwares	22nd January 2025, 02:00 PM -04:00 PM
7	Dr. Mani Salaria, Love Professional University, Punjab	Understanding Ethical Issues and Plagiarism	23rd January 2025, 10:00 AM -12:00 Noon
8	Dr. Sonali Roy, IISER, Kolkata	Journal Selection, Ethical writing and Intellectual Property Rights Methodology and Research Ethics	23rd January 2025, 02:00 PM -04:00 PM
9	Dr. Sabuj Bhattacharya, Institute for Stem Cell Science and Regenerative Medicine, Bangalore		
10	Dr. Kirti Bhagirath Government College, Ropar, Punjab	Hypothesis Development and Testing	24th January 2025, 10:00 AM -12:00 Noon
11.	Dr. Agnibha Das Majumdar Madanapalle Institute of Technology and Science	Research Paper Structure and Design, Review of Literature	24th January 2025, 02:00 PM -04:00 PM
12.		Group photo session, Feedback and Valedictory	24th January 2025, 4:00 PM-4:30 PM

Day 1: 20-01-2024 (Monday)

The program commenced at 09.30 AM with a welcome note by **Dr. M. Chandra Sekhar, Head, Department of Physics, MITS**, and coordinator for the FDP. He elucidates about the departmental activities and research activities details going in the department of physics and **Vice principal Academics, Prof. P. Ramanathan** Presented Inaugural address to audience and highlighted the concept of making FDP online mode for the usefulness to the research community. **Dr. Agnibha Das Majumdar, Assistant Professor and Convenor** address the gathering and aim scope of thematic conference and details about the speakers in the FDP. Dr. K Chandrakanta addressed the gathering about the structure of the FDP and criteria of obtaining FDP, such as feedback submission.

Welcoming to the first speaker of FDP **Dr. Neha Munjal**, from **Department of Physics, Lovely Professional University, Punjab**. She is working as an Associate Professor at Lovely Professional University, Punjab, India. She has completed her Ph.D. and master's degree from Banasthali Vidyapith and has more than 10 plus years of teaching and research experience. She has published 70+ research papers in the reputed journals, has granted 2 patents and has published 3 books. She has been a resource person in several Faculty Development Programs and delivered sessions on Research Methodology. She has been awarded the best teacher award in 2020, by the RSP Science Hub & RSP Research Hub. Her research areas are nanomaterials, spectroscopy and its applications in food products, computational physics and bibliometrics. She delivered the first talk on **Introduction to Research Methodology**. She explained about research methodology, which is the backbone of systematic inquiry, offering a structured approach to investigating questions and solving problems. This talk introduces the key concepts of research methodology, emphasizing its purpose, scope, and application. Also, she explained about an engaging analogy like research to cooking, highlighting the parallels between selecting ingredients (data), following recipes (methodology), and adjusting flavours (analysis) to achieve desired outcomes.

The second Session started on the same day afternoon. **Dr. Shiv Singh, University Librarian, Symbiosis International University, Pune** Publication Guidelines: A Comprehensive Guide for Authors" is a thorough resource designed to assist academic and professional writers in navigating the complex landscape of manuscript submission and publication. This guide offers clear and detailed instructions on every aspect of the publication process, including structuring research papers, adhering to journal-specific formatting requirements, and ensuring compliance with ethical standards. Emphasizing the importance of clarity, coherence, and originality, the guide also covers common pitfalls, such as plagiarism and incorrect citation practices.

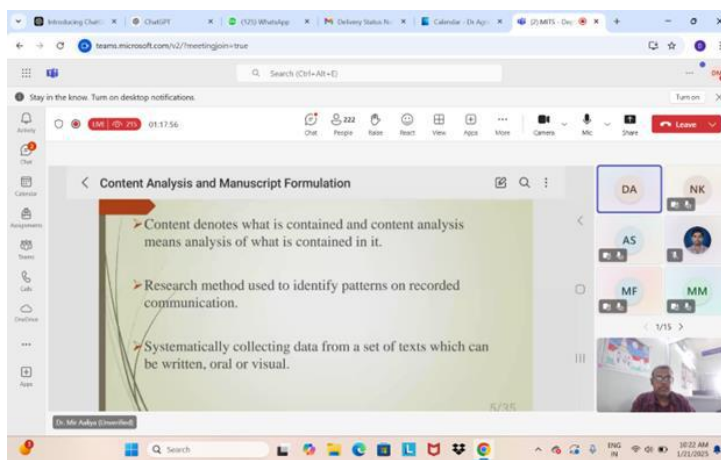
Additionally, it provides insights into the peer-review process, tips for effective communication with editors and reviewers, and strategies for increasing the visibility and impact of published work. This comprehensive approach ensures that authors are well-prepared to contribute to the academic and professional community while adhering to best practices in scholarly publishing.



Day 2: 21-01-2024 (Tuesday)

On the second day the first half of the talk from 10.00 am to 2.00 Noon. is given by **Dr. Mir Aaliya**. Dr. Mir Aaliya is an accomplished academic and researcher specializing in Mathematics, with a Ph.D. from Lovely Professional University, Punjab, India, and an impressive academic track record, including published research in topological spaces and continuous functions. With over two years of teaching and research experience at reputed institutions like Lovely Professional University and Chandigarh University, currently she is serving as assistant Professor, Department of Mathematics, Government Degree College, Sopore, Kashmir and she has also contributed significantly through research presentations at international conferences and published works in SCOPUS-indexed journals. Dr. Aaliya is skilled in MATLAB, LaTeX, and academic writing, with additional talents in poetry and newspaper column writing. she outlined about the different methods of content analysis and manuscript writing. She has shown different tools to construct a good manuscript and also, she has delivered how to modify the research paper for good journal communication.

The afternoon session started at 2.00 pm and continued upto 4.00 pm is given by **Dr. Jaya Gupta**. Dr. Jaya Gupta is currently working as an assistant professor in the department of mathematics in GNA University, Punjab. Her research area is cosmology, wavelet theory and numerical techniques. She is expertised in differential equations and always tries to find the best possible solution of various differential equations that have application in the field of engineering and mathematics. She has published 7 research papers, book chapters in SCI and scopus index journal with good impact factor and also got one patent granted. currently she is working on different projects. She discussed research problem formulation and research gap identification. She has given a pathway to all the participants about how a potential researcher can find a good research gap by doing extensive literature survey. She has given some idea to search some good literature also.

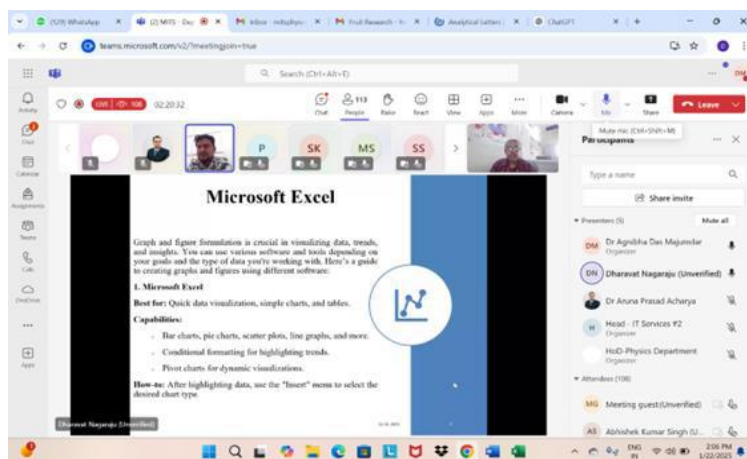


Day 3: 12-01-2024 (Wednesday)

The third day both the morning session conducted form 10.00 am to 12.00 noon is scheduled by **Dr. Rameesa Jan**, Dr. Rameesa Jan is a dedicated researcher, data analyst, and educator with a Ph.D. in Statistics and extensive experience in biostatistics and advanced statistical modeling. Her expertise includes distribution theory, regression analysis, and statistical inference, complemented by proficiency in tools like R, SAS, SPSS, and LaTeX. Currently she is working as Assistant Professor, Department of Statistics, Government Degree College, Sopore, Kashmir. She has contributed significantly to statistical research through publications in peer-reviewed journals and presentations at international conferences. Her achievements include gold medals for both her M.Sc. and B.Sc. degrees, along with prestigious awards and scholarships. With over 20 months of industrial experience at IQVIA and academic teaching roles, she brings a robust understanding of both theoretical and applied statistics. Dr. Jan is passionate about deriving actionable insights from complex data and advancing innovative statistical methodologies. High pressure structural phase transition of Sc-based ternary Borides from first-principle calculations. She given valuable overview of different software tools based on quantum mechanical simulations. It is useful to identify for the particularly solving the task. She has delivered about the different data analysis methods. Especially she has demonstrated with SPSS software to show the data analysis methods and also, she delivered about the different sampling methods such as random and non-random sampling methods. She focused on quantitative data analysis.

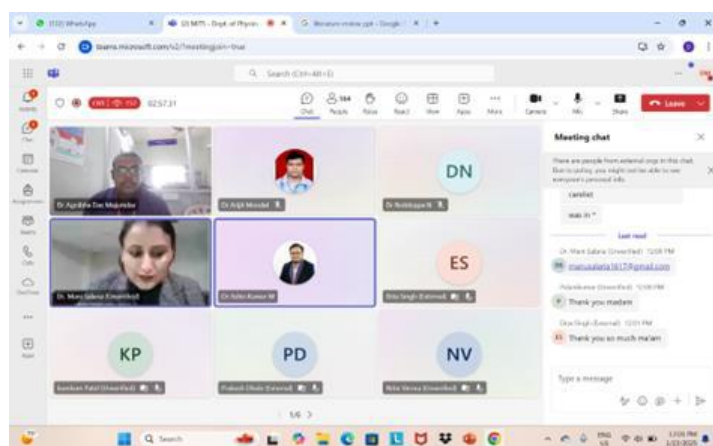


The second talk is given by **Dr. Dharavat Nagaraju**, who is the assistant Professor and Assistant Dean of Training and Placement Cell. He has published many research articles and has got the UGC Scholarship. He has given exciting talk on graph and figure formulations and also shown many software with which researchers can make graphical abstracts efficiently.



Day 4: 23-01-2024 (Thursday)

The fourth day first talk is given by **Dr. Mani Salariaia** from 10.00 am to 12.00 noon. Dr. Mani Salaria is an Assistant Professor in the Department of Horticulture at Lovely Professional University specializing in Horticulture (vegetable science). With a deep commitment to advancing the field of horticulture, Dr. Salaria's research primarily focuses on sustainable vegetable production, crop management and innovative agricultural techniques. Dr. Mani holds a Ph.D. in Horticulture, for which she was honored with the prestigious Best Doctoral Thesis Award from the Indian Council of Agricultural Research (ICAR) Deputy Director General R.C. Agrawal. She is also a Gold Medalist in her master's degree, further showcasing her academic excellence and dedication to the field. Her research contributions include publishing patents in Indian Patent Journal in areas related to agriculture, reflecting her innovative approach to solving real-world challenges in the sector. Additionally, Dr. Mani has published numerous research papers and review articles in highly reputed, high-impact factor that are Scopus-indexed journals. She has given the expertise talk on understanding ethical issues and plagiarism. As for any research writing plagiarism is a key challenging factor, with her lecture she has told the solution how to reduce the plagiarism and also hoe to maintain ethics in research.



Afternoon session from 2.00 pm to 4.00 pm is given by two persons together **Dr. Sonali Roy and Dr. Sabuj Bhattacharyya**. Dr Sonali Roy completed her PhD in Toxicology from Visva Bharati University and moved to the University of Tokyo as a JSPS fellow. After completing the tenure, she joined CSIR-NEIST Jorhat and worked for a couple of years. She had a keen interest in applied science and translation. She left CSIR-NEIST and joined NIPER-Guwahati as the Incubation Manager in the BioNEST funded incubator from its inception. She established the center and made it one of the promising bio incubators of NER. She got the opportunity to return to her home state as COO of the RISE Foundation IISER Kolkata and returned with a mind set to contribute to the changing ecosystem. She is trained with several innovation management related programs from IIM Kolkata, Atal Innovation Mission, NITI Aayog, National Biopharma Mission, DBT-BIRAC etc and "Dr Sabuj Bhattacharyya currently working as Scientist and Research Ethics and Integrity Officer at inStem (iBRIC-inStem, Govt of India), Bangalore. He has received training in ecology, population genomics as well as in research ethics and integrity during his Ph.D. tenure at Wildlife Institute of India, Dehradun, and the University of Colorado, Boulder as well as during post-doctoral tenure at Indian Institute of Science, Bangalore, and the University of Sheffield. Prior to joining inStem, he worked as a grant adviser at leading funding agency, DBT -Wellcome Trust India Alliance as a science facilitator. Sabuj is an alumnus of Fulbright Nehru Fellowship, British Commonwealth Fellowship, Inlaks Foundation Fellowship, and currently serving as a member of British Commonwealth Scholarship Commission Advisory Panel (2021-2025), IUCN Lagomorph Specialist Group (2009- till date). Both of them have delivered the lecture on journal selection, intellectual property rights, technology transfers and research ethics. Dr. Sabuj also offered some internship visits to the participants for the upcoming days.



Day 5: 24-01-2025 (Friday)

The Final day the first session on morning commenced by **Dr. Kirti Bhagirath**, A very exciting talk on **Hypothesis Development and Hypothesis testing** is given in the morning 10.00 am to 11.30 am. Dr. Kirti Bhagirath is a dedicated academic professional with a Ph.D. in Mathematics from Lovely Professional University and over five years of teaching experience as an Assistant Professor at Government College, Ropar. She specializes in mathematical modeling, with notable research on population dynamics and the impact of environmental factors on grain storage. Her work has been recognized at various international conferences, including RAFAS-2021 and ICMET-21. She holds advanced degrees in Mathematics (M.Sc. Hons., Ph.D.), Computer Science (B.Sc.), and Education (B.Ed.), with consistent academic excellence and also Published studies on nonlinear stochastic processes and ecological impacts of insect infestation in stored grains in reputed indexed and high impact journals. She qualified CSIR-UGC NET and CTET, with additional skills in MS Office, MATLAB, SageMath, and Python. She has Actively participated in cultural, academic, and IT events, including Inter-College Mathematics Quizzes and National Science Olympiads. Dr. Kirti brings a blend of academic expertise, research prowess, and active involvement in student-centric activities, making her a valuable asset to any institution. A detailed overview of hypothesis testing and types were discussed.



The second session an interesting talk is given by **Dr. Agnibha Das Majumdar**, Assistant Professor, Department of Physics, Madanapalle Institute of Technology and Science, Andhra Pradesh. The talk is on **Research Paper structure and design and Review of literature**. Dr. Agnibha Das Majumdar is an accomplished physicist specializing in atomic and molecular spectroscopy, computational physics, and food technology. With a Ph.D. in Physics from Lovely Professional University, Punjab, he has over four years of research experience and expertise in near-infrared spectroscopy and theoretical modeling. He has published many research papers in reputed international journals and authored three books and presented his work at over 30 conferences worldwide. A recipient of several awards, including the Global Icon Award 2024 and Excellence in Research and Innovation Award, Dr. Majumdar is also a skilled mentor and speaker, recognized for his contributions to workshops, conferences, and faculty development programs. His work extends to interdisciplinary fields, where he leverages spectroscopy for advancements in food science. Beyond his academic achievements, Dr. Majumdar is proficient in tools like SPSS, OriginLab, and Turbo C++. He remains committed to research, teaching, and fostering collaborations across scientific domains. He delivered different sources of literatures and how to construct good review papers with research tools. He also delivered about the different structure and formatting methods of research paper construction.

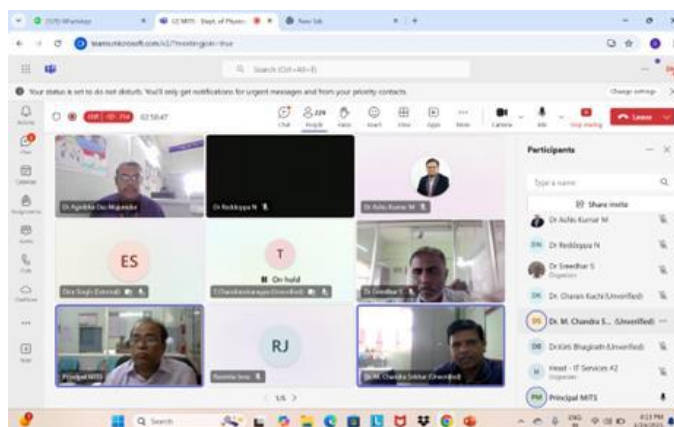


Day 5: 12-05-2023 (Friday), Valedictory Session

The valedictory session is handled by **Dr. M. Chandra Sekhar**, Head, Dept. of Physics, Principal, **Prof. C. Yuvaraj** presented a valedictory address to the audience and a vote of thanks given by **Dr. Sunku Sreedhar**, Assistant Professor, Dept. of Physics, MITS. It flowed by feedback sessions from all the participants.



We thank all eminent speakers whose involvement is highly appreciated. All of them deliver excellent material which is very useful for the research community. Without the contributions of speakers, the FDP may not be a grand success. The wide presence of active participation from various institutions throughout the FDP is highly appreciated. We thank all the active participants for their participation. We thank valuable support from technical support from systems, MITS, all other faculty, and well-wishers who are not mentioned in this list.



We thank Principal sir, Prof. C. Yuvaraj and Vice Principal, Prof. P. Ramanathan for his cooperation during the FDP. Our heart felt thanks to the management, MITS Madanapalle, for encouraging and supporting us.

Outcomes:

At the end of the Faculty Development program, the participants can able to

- Learn about the Research Methodology and Research paper writing
- Install the SPSS software regarding data analysis
- Develop more efficiently the research articles, book, book chapters and review papers
- Select the journals from Scopus and WOS database
- Apply the knowledge of research ethics while conducting their research
- Apply for different intellectual properties and Learn about the process of technology transfer and patent filing

SDG Mapping:

SDG 4: Quality Education

- The FDP enhances research skills and academic writing competencies for faculty and researchers.
- It promotes access to quality learning resources, research ethics, and best practices.

SDG 5: Gender Equality (If gender diversity was encouraged)

- The presence of diverse speakers and participants across different institutions contributes to inclusivity in education and research.

SDG 9: Industry, Innovation, and Infrastructure

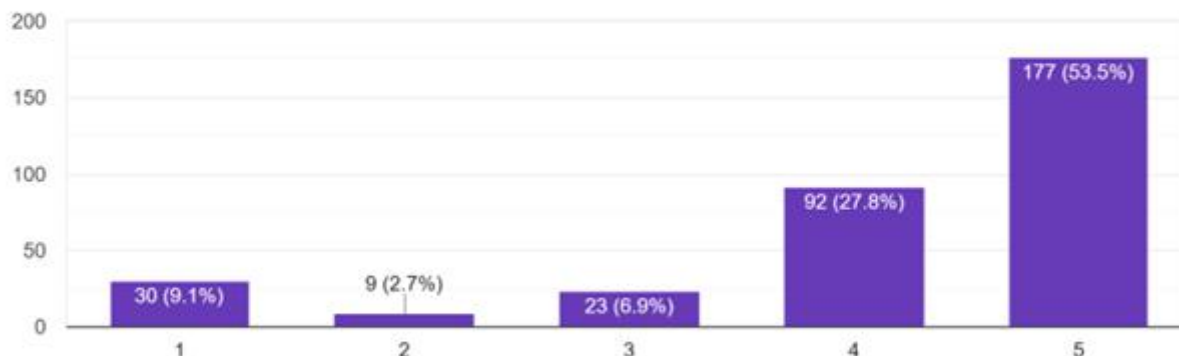
- Encourages research output, innovation, and the use of advanced analytical tools like SPSS.

- Discussions on intellectual property, technology transfer, and patents align with fostering innovation.
- **SDG 16: Peace, Justice, and Strong Institutions**
 - Promotes ethical research practices, plagiarism prevention, and academic integrity, strengthening research credibility.
- **SDG 17: Partnerships for the Goals**
 - Facilitates interdisciplinary collaboration and networking among researchers, faculty, and institutions.
 - Enables knowledge-sharing for academic and research advancements across India.

Feedback Analysis:

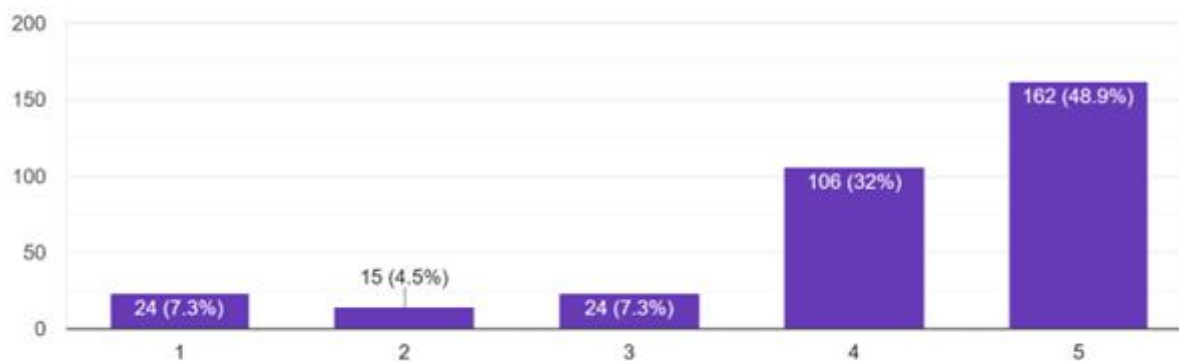
How relevant and useful was the content of the FDP to your teaching or professional development needs?

331 responses



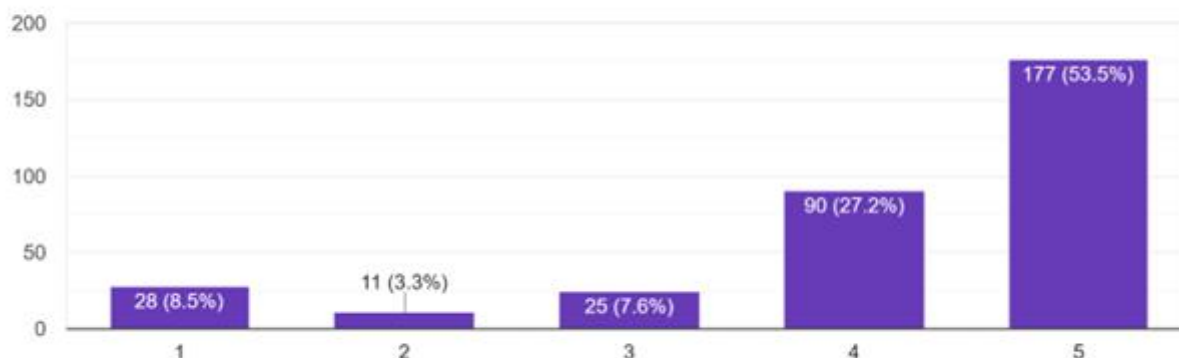
How confident are you in implementing what you learned from the FDP?

331 responses



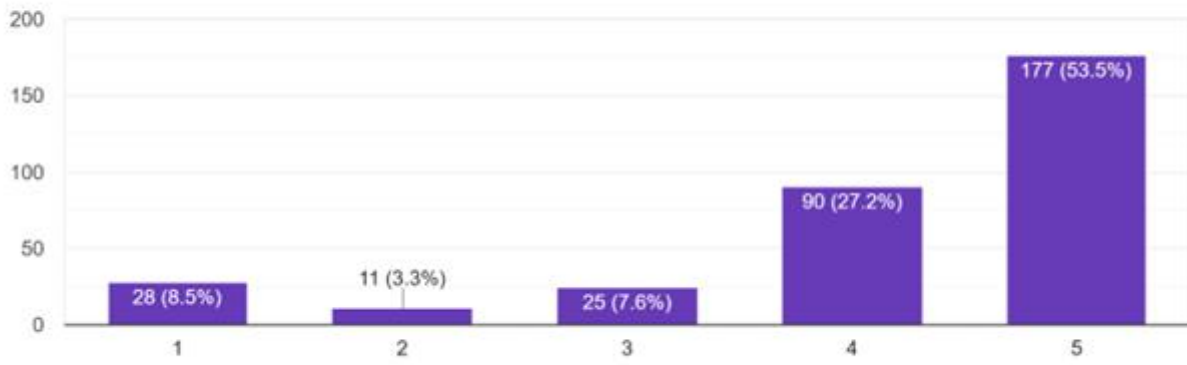
How would you rate the effectiveness of the presenters/speakers in conveying the material?

331 responses



How would you rate the effectiveness of the presenters/speakers in conveying the material?

331 responses



How satisfied were you with the overall FDP experience?

331 responses

