Short-Term Capacity Building Programme on Research Methodology

A six-day Short-Term Capacity Building Programme on Research Methodology was organized by the Association of Indian Universities-Dayalbagh Educational Institute-Academic and Administrative Development Center (AIU-DEI-AADC) in association with the Department of Applied Business Economics, Faculty of Commerce, DEI from March 11-16, 2024.

The program aimed to assist budding researchers in both preparation and motivation for conducting their original research. Through the infusion of a scientific approach and the introduction of research tools and techniques, participants were trained to conduct thorough investigations. Additionally, the program emphasized the ethical use of artificial intelligence. Interactive sessions and hands-on exercises were utilized to reinforce learning. The comprehensive course content featured twelve modules expertly crafted by eight resource persons. A total of forty-eight participants from diverse locations were able to attend the program in a blended mode.

The inaugural of the program was organized on March 11, 2024. It started with the Institute's Prayer. Prof. V. K. Gangal, the convener introduced the theme of the program. Prof. N.P.S Chandel, Professor, Department of Foundations of Education, and Research Coordinator, Faculty of Education, DEI was the chief guest. He highlighted the need for and importance of research and its adequate methodology for original research. Prof. M. Naved Khan, Professor, Department of Management, Aligarh Muslim University, Aligarh was the Guest of Honour. Prof. Jyoti Gogia, the nodal officer of AIU-DEI-AADC highlighted the objective of the AADC and its successful execution of programs. Prof. L. N. Koli was joined as a distinguished guest. Ms. Sakshi proposed the vote of thanks.

During the first day of the Programme, Prof. Naved Khan from the Department of Management at Aligarh Muslim University emphasized the *Necessity and Stages of Research*. His session provided a well-rounded learning experience for attendees, combining theoretical frameworks and real-life examples to cater to diverse research interests. Participants gained valuable insights into the research process, including navigating its intricacies and employing innovative data collection techniques. Prof. Khan also fostered interactive dialogue, encouraging attendees to critically evaluate research paradigms and explore interdisciplinary approaches to tackle contemporary challenges.

During the second day of the Programme, Professor Pushpendra Surya from Kirori Mal College, University of Delhi delivered a highly interactive session on the *Review of Literature and the Process of Formulation of Hypotheses*. He emphasized the importance of conducting an extensive literature survey related to one's research problem and discussed the philosophical roots of curiosity-driven research. Prof. Surya highlighted how this type of research is valuable in everyday life, from the medical field to policy formulation in business and government affairs.

During the third day of the program, Prof. Nidhi Sharma, from the esteemed Department of Economics at Banaras Hindu University in Varanasi, enlightened the participants on the crucial processes of *Data Mining and Data Cleansing*. Attendees had the invaluable opportunity to engage in a hands-on practice session led by Prof. Sharma, where they were trained on the utilization of AI-powered tools for various tasks such as literature reviews, hypothesis development, questionnaire design, data cleaning, and accurate data analysis. Additionally, the session also covered essential skills such as managing references and the preparation and presentation of reports.

The day after, Dr. Preet Kumari from the Department of Psychology at DEI delivered a lecture on the *Tools of Data Analysis and Testing Hypotheses*. She covered a range of parametric and non-parametric tools for data analysis, as well as the steps involved in hypothesis testing. Dr. Kumari provided hands-on training on various data analysis tools and techniques, including t-test, z-test, F-test, ANOVA, and chi-square test, using the Statistical Package for Social Sciences (SPSS). Her guidance was instrumental in helping participants improve their data analysis and hypothesis testing skills.

During the fifth day of the program, Dr. Rekha Handa from the University Business School at Guru Nanak Dev University in Amritsar provided insight into *Report Writing and Presenting Research Findings.* Her discussion covered various challenges that researchers may encounter, such as ethical concerns, resource limitations, and access restrictions when publishing their work in reputable journals. Dr. Handa emphasized the importance of effectively presenting research findings, which is just as crucial as other aspects of the research process. Later on, Dr. Mange Ram, the Librarian at DEI, addressed the topic of *Plagiarism*. Participants were taught proper citation techniques to avoid plagiarism and were presented with real-life examples of issues related to plagiarism. Dr. Mange Ram encouraged participants to maintain academic ethics in their research endeavors.

On the same day, Dr. V. Prem Prakash, Department of Electrical Engineering at DEI discussed *the Use of Artificial Intelligence in Research.* This informative session emphasized how AI can revolutionize research by boosting efficiency and accuracy, allowing researchers to work with vast datasets, extract valuable insights, and innovate at an unprecedented pace. Participants also explored the diverse applications of AI in research, including Natural Language Processing (NLP) and Large Language Model (LLM), and were provided with ethical guidelines for utilizing tools like ChatGPT. Additionally, hands-on practice sessions were conducted, enabling attendees to utilize AI tools for literature reviews, formulating hypotheses, designing questionnaires, cleaning data, conducting accurate data analysis, managing references, and preparing and presenting reports.

Finally, Prof. Rupali Satsangi, Department of Economics at DEI offered valuable insights on the art of *Drafting and Publishing Research Papers and Preparation of Research Proposals.* She enlightened the audience on different research platforms, peer-reviewed journals of repute, and their impact factors. Participants were guided on navigating potential obstacles while publishing research papers in esteemed journals. Her session aimed to empower participants to become proficient researchers, poised to contribute significantly in their respective fields.

During the Valedictory Session, Professor V.K. Gangal, the programme convener, presented the brief programme report, while both online and offline participants shared their feedback. They commended the programme for being both informative and engaging, with highly interactive and practical sessions that equipped them with essential research skills. Prof. C. Patvardhan, Director of Dayalbagh Educational Institute (Deemed to be University), emphasized the importance of continually seeking innovative solutions to research problems rather than limiting investigations. He also recognized the contributions of participants, resource persons, and the organizing team by distributing participation certificates and mementos. A gesture of gratitude was extended to the DEI and AIU Advisors, organizing committee members, technical staff, and students for their seamless teamwork. The programme concluded with the Institute Song. Overall, the workshop was a success, and attendees left with enhanced research acumen.