Bharat Ratna Prof.CNR Rao Research Centre

Report of the Workshop on

"Design Expert Software-Training Programme"

(for Research Scholars of School of Arts and Social Sciences)

Date: 12.07.2023

Time: 10.00 am to 12.30 pm

(Forenoon)

Venue: Room No: 111 (Science Block)

Report on Workshop Design of Experiment Software – Training Programme

A one day workshop on the Design Expert software was organized by Dr. P. Lalitha (Coordinator), Dr. P. Arulpriya (Assistant Coordinator) and Ms. S. Suba Sree (Lab Technician) of Bharat Ratna Prof. CNR Rao Research Centre and Master of Ceremony was delivered by Ms. R. Harinivashini (Research Scholar, Chemistry). The workshop was held on 12th July 2023 from 10.00 am – 12.30 pm at Room No: 111 (Science Block) of our institution for Full time and Part time Research Scholars and Faculty members of School of Arts and Social Sciences.

The session began with a prayer song followed by introductory talk by **Dr. P. Lalitha**, Director, R&D i/c. The facilities available at Bharat Ratna Prof. CNR Rao Research Centre are briefly summarized with a short video glimpse for the audience. The advantages of the Design Expert software in big data analysis were also highlighted in the talk.

The theory and demonstration of the software were handled by **Ms.Pon Nivetha. A**, Research Scholar, Department of Chemistry. The theory session focused on the Introduction of Design Expert software, experimental design, data analysis, Response Surface Methodology (RSM), brief explanation of mixture designs, and examples of graphical visualization, and data optimization were provided. The theory part is followed by the software demonstration via a recorded video. The data used for the demonstration was mainly focused on Arts and Social Sciences (survey). Three examples were worked out by performing RSM analysis and optimization. The session included data importing, saving, analysis, exporting the result tables and charts and optimization.

The conclusion of the workshop was with the question and answer sessions. The minimum data set required and the possibilities of incorporating intervention factors for RSM analysis were enquired. Also the common queries such as the possibilities for consultancy, the tariff for the specific studies raised by the participants were addressed by the speaker Ms.Pon Nivetha in detail followed by participant feedback. Researchers and faculties belonging to English, Psychology, Economics, Education and Hindi of about **22 in numbers were the beneficiaries** of the workshop.

Dr. P. Lalitha, Director (i/c), Research and Development, Coordinator Bharat Ratna Prof. C.N.R Rao Research Centre delivered introductory talk

Ms. A. Pon Nivetha, Research Scholar, Department of Chemistry demonstrate the Origin software and its usage involved in research work

E-Certificate of participation (sample copy)

About the Software Design Expert

Design-Expert is a **statistical software program** commonly used in the field of design of experiments (DOE). It is primarily **used to plan, analyze, and optimize experiments** in various industries such as pharmaceuticals, manufacturing, engineering, and research and development.

The **main purpose** of Design-Expert software is to help researchers and engineers design experiments that efficiently and effectively explore the **factors affecting a particular process or system**. It **provides tools and techniques for experimental design, data analysis, and visualization.**

Some of the key uses and features of Design-Expert software:

Experimental Design: Design-Expert allows users to design experiments by selecting the appropriate design type, such as factorial, response surface, mixture, or Taguchi designs. It helps in determining the optimal settings for the factors under investigation and ensures efficient use of resources.

Data Analysis: The software offers a wide range of statistical analyses for experimental data. It can perform analysis of variance (ANOVA), regression analysis, optimization, and graphical representation of data through various plots and charts.

Response Surface Methodology (RSM): Design-Expert supports response surface methodology, which involves creating mathematical models to understand the relationship between input variables (factors) and output responses. It helps in predicting the optimal combination of factors to achieve desired response levels.

Mixture Designs: Mixture experiments are used when a system or process involves multiple components. Design-Expert allows users to design and analyze experiments involving mixtures, helping to determine the optimal composition or proportions of the components.

Graphical Visualization: The software provides visual tools like contour plots, 3D surface plots, response trace plots, and interaction plots. These visualizations help users interpret and communicate the results of their experiments effectively.
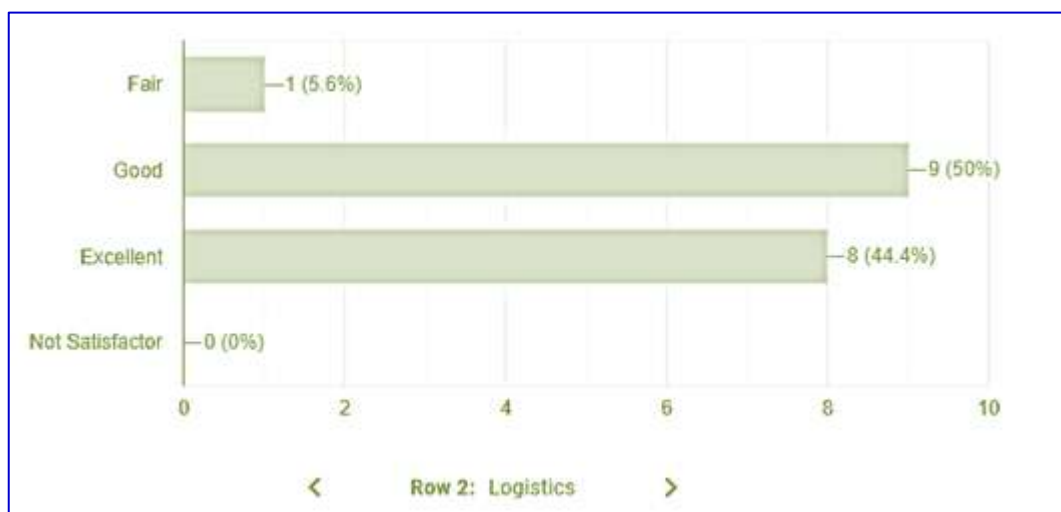
Optimization: Design-Expert facilitates optimization by allowing users to find the optimum factor settings that maximize or minimize a response. It can perform numerical optimization based on user-defined objectives and constraints.
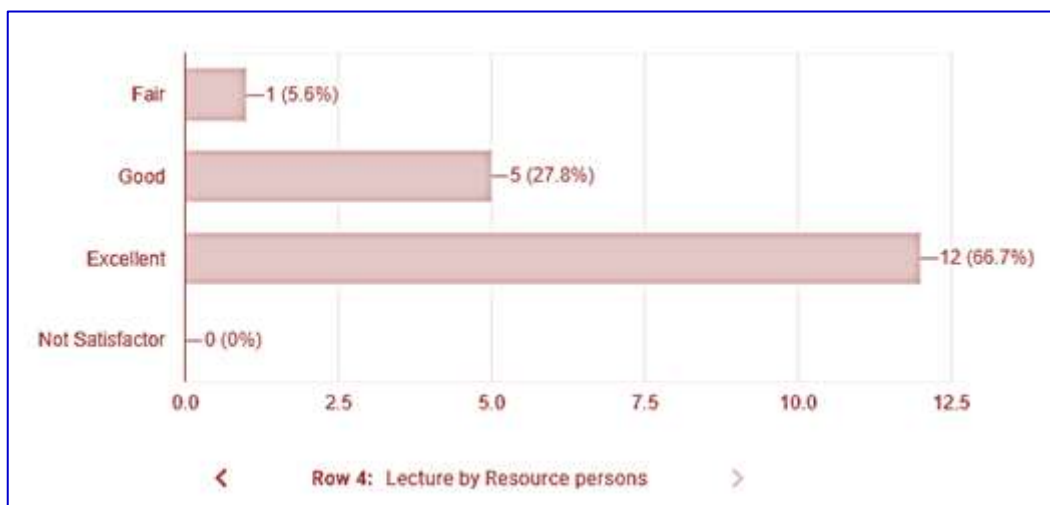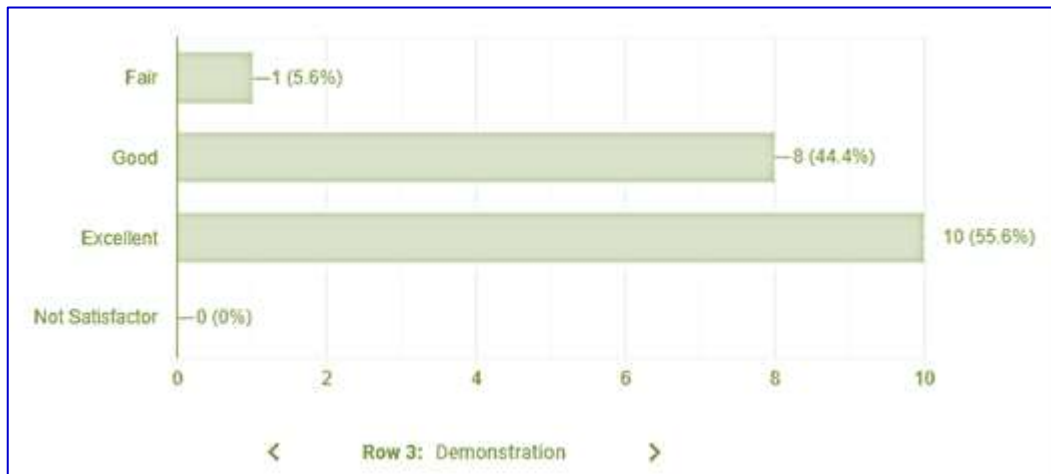
Overall, Design-Expert software is a powerful tool for experimental design and analysis, helping researchers and engineers make data-driven decisions, optimize processes, and improve product quality and performance.

PROGRAMME

10.00- 10.05 am	:	Prayer

10.05- 10.15 am : Welcome

Dr.P.Lalitha

Professor of Chemistry,
Director R & D i/c
Coordinator of Prof CNR Rao Research Centre
Avinashilingam Institute for Home Science
and Higher Education for Women

10.15 – 11.45 am : **Technical Session**

"Design Expert Software Training

Programme for Arts and Social Sciences"

Ms. A. PonNivetha

Ph.D Scholar, Dept. of Chemistry
Avinashilingam Institute for Home Science
and Higher Education for Women

11.45 am-12.15pm : **Feedback Session / Interaction**

12.15 - 12.30 pm : **Vote of Thanks**

Any one scholar-voluntary basis

Feedback about the event

Row 1: Conduct of workshop

Row 2: Logistics

Row 3: Demonstration

Fair	1 (5.6%)
Good	8 (44.4%)
Excellent	10 (55.6%)
Not Satisfactor	0 (0%)

Row 4: Lecture by Resource persons

Fair	1 (5.6%)
Good	5 (27.8%)
Excellent	12 (66.7%)
Not Satisfactor	0 (0%)

Suggestion given by participants

- Overall good

- Conduct hands on training for more understanding

- We are looking forward to take up hands on training soon

- GREAT EXPERIENCE

- Good session

- Good

- Sessions having English students in mind could be organized

- None

- Highly Informative

# Attendance sheet of the Participants

Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD)
Re-accredited with A++ Grade by NAAC, CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Bharat Ratna Prof.C.N.R Rao Research Centre
Workshop on "Design Expert Training Programme for Arts and Social Sciences"

Date: 12 .07.2023 (FN)   Time: 10.00 am to 12.30 pm   Venue: Room no : 511 (Science Block)

Attendance Sheet

S.No	Name of the Participant	Class/Designation	E-mail	Mobile Number	Signature
1	KALPANA	Ph.D (Tamil)	20PHTMF001@avinuh...	7708362127	
2	M Sathya	Asst. Professor/TOD	sathya_psy@avinuty.ac.in	6374266116	N.Sathy
3	Sudha P	'' ''	sudha-psy@avinuty.ac.in	9702373887	R.Sudha
4	Niraja.T.k	Ph.D Hindi	20phhif004@avinuty.ac.in	9943741204	
5	Aswini Aji	Ph.D Hindi	21PHHif002@avinuty.ac.in	9746384365	Aswini
6	Josephine Dheem A	Ph.D French	20phfrf001@avinuty...	9626627335	
7	SHARMILA V	Ph.D (ENGLISH)	21PHENf003@avinuty...	8667266086	V.Sha
8	S.Chandhimoni	Professor and HOD Sci	gandhimuki.eco @avinuty.in	9443816930	S-i-y
9					

	Name	Class / Designation	E-Mail	Mobile No	Signature
10	Athisami. C.J	Ph.D (Hindi)	20PHhjf004@avinuty.ac.in	9905132763	
11	Preethi .V	Ph.D (English)	20phenf004@avinuty.ac.in	4600440521	
12	Gayathri S	Ph.D (English)	9phenf001@avinuty.ac.in	6366755744	Gayitha.B
13	Bivola Prikamim.M	Ph.D (Psychology)	21phppo05@avinuty.in	9629782498	
14	P. nirmala	Ph.D (Economics)	19phecf001@avinuty.ac.in	9952241245	Nirmala
15	Dr. V.Dhivya karthiga	PDF scholar (Economics)	dhivya.karthiga.phd@avinuty.ac.in	9994330968	
16	Srinithi. A.M	Ph.D (Psychology)	srinithi_psy@avinuty.ac.in	9626310140	
17	Sanmathi. A.P	Ph.D (Psychology)	sanmathi.psy@avinuty.in	8526949474	
18	Subhashini S	Ph.D (Psychology)	subhashini-psy@avinuty.in	8072474273	S.Sub
19	Antony Philomena M	Ph.D (Education)	21phed f003@avinuty...	9647950950	Antony Philomen
20	Lavanya K.M	Ph.D. English	19phenf013@avinuty.in	9626126245	
21	Swetha S	Ph.D. English	18phen f001@avinuty.ac.in	9944456726	
22	Preethika S	Ph.D. English	20phenf008@avinuty.in	8903169491	
23	Devika Rahhat	Ph.D English	18phenf002@avinuty.ac.in	9445573124	
24					
25					
26					
27					

Receipts of the Workshop

(Total Amount: Rs.1100/-)

Miscellaneous Receipt

Original

Receipt No	:REM716/2023-24
Receipt Date	:13-07-2023
Name	:Gayathri.B
Department Name	:Ph.D/English
Account Type	:Research and Consultancy
Towards	:Prof.CNR Rao Res.Centre
Description	:Design Expert Training Programme July (Ref.319383431702/ 12.07.2023)
Mode of Payment	:Online RTGS
Amount	: ₹ 50.00/-

(Received Fifty rupees only)

Cashier

Miscellaneous Receipt

Original

Receipt No	:REM717/2023-24
Receipt Date	:13-07-2023
Name	:Design Expert Training
Department Name	:Programme for Arts and Social Science
Account Type	:Research and Consultancy
Towards	:Prof.CNR Rao Res.Centre
Description	:Design Expert Training Programme July (Ref.319348176186/ 12.07.2023)
Mode of Payment	:Online RTGS
Amount	: ₹ 1050.00/-

(Received One Thousand and Fifty rupees only)

Cashier

Permission Letter

Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD)Re-accredited with 'A++' Grade by NAAC.
Recognised by UGC Under Section 12 B Coimbatore-641 043, Tamil Nadu, India

GUIDELINES/PROFORMA FOR ORGANISING CONFERENCES, WORKSHOPS, SEMINARS, WEBINARS OR OTHER EVENTS MARCH 2022 and onwards

Name of the applicant: Dr.P.Lalitha, Department: Prof. CNR Rao Research Centre   School: R & D

1. Activity : **Workshop**
2. Geographical Coverage : Institutional Level
3. Name of the Event : **Design Expert Training Programme For Arts & Social Sciences**
4. Date(s) : 12.07.2023   Total number of days: One
5. Venue : Gallery
6. Name & Designation of Convenor/Organizing Secretary and Team

   Convenor : Dr. P. Lalitha, Director R&D i.c, Coordinator, Prof. CNR Rao RC

   Organizing Secretary : Dr. P. Arulpriya, Asst. Coordinator, Prof. CNR Rao RC

   Organizing Member : Ms. S. Suba Sree, Lab Technician, Prof.CNR Rao RC

7. Financial Assistance Required : No
8. Details of assistance sought from other sources : Nil
9. Details of collaborating institution, if any : Nil
10. Detailed Proposal of the Activity

    A. Aims/Objectives :

    Effective usage of Design Expert Software for researchers of School of Arts and Social Sciences

    B. Target audience/participants with expected number: 30

    C. Details of Sessions:

    The Session covered the advancement of DE software for data analysis of Arts and Social Sciences

    D. Please mention themes/topics to be covered under each Technical Session and names of Resource Persons:

    Demonstration : Ms. A. Pon Nivetha, Ph.D Scholar, Dept. of Chemistry, ADU

    E. Expected outcome:

11. In case of an International Conference and collaboration, kindly give resources for International travel and a letter from the concerned head of the collaborating body
12. Registration fee: Yes Rs.50 per participant.

Asst Coordinator   **Coordinator**   **Director R&D**

Finance Officer   **Registrar**   **Vice Chancellor**
30.6.23   30|6|23

Date: 30.06.2023
Place: Coimbatore

Acknowledgement

The organizers thank the authorities of the Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for the necessary approvals and opportunity to conduct this event.

Signature of the Coordinator

(P.LALITHA)