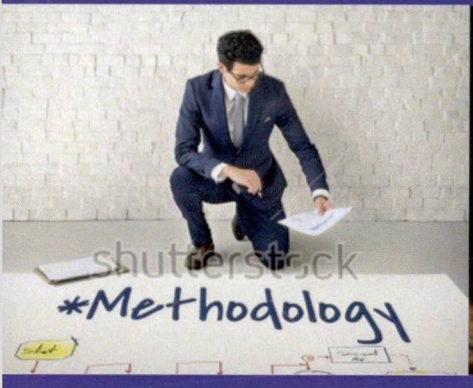
Educational Research Methodology

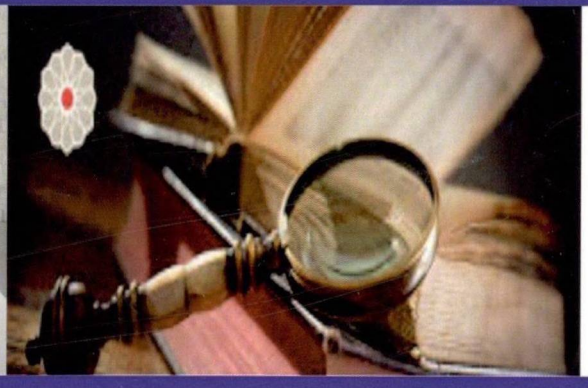
(21 DAYS COURSE - TRAINING PROGRAMME)

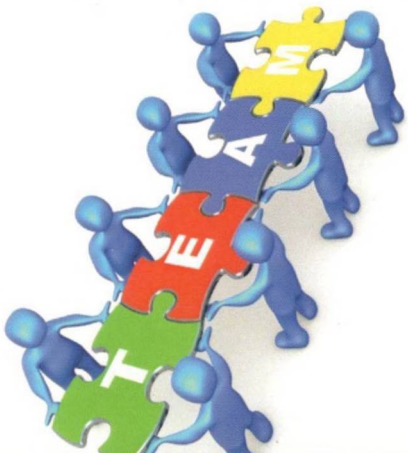
PROGRAMME COORDINATOR

Dr T V SOMASHEKAR

ASSISTANT PROFESSOR, RIEM







विद्यया ऽमृतमश्नुते

एन सी ई आर टी
NCERT

Regional Institute of Education
Mysuru
2017-18

CONTENT:

ACKNOWLEDGEMENT

I express my sincere thanks to following persons who have supported me directly or indirectly in this two spells of the training programme.

Education Secretary's of the concerned states for deputing their educational functionaries to the programme.

Director's of SCERTs for deputation of SCERT and DIET faculty to the programme.

Prof Y Sreekanth principal, RIEM, Mysuru for the administrative support rendered in successful completion of the programme.

Prof S Ramma, Dean (Instructions); Prof C G Venkateshamurthy, Dean (Research); Prof Manjula P Rao Head, Department of Education, Prof M U Paily, Prof V Ramdas, Prof K Anil Kumar, Dr Sujatha B H; Dr V Chandranna-faculty of Education for their support as "Internal Resource Persons" in one or both the phasesof the programme.

Prof V D Bhat; Prof Asha KVD Kamath; Prof C S Nagaraju; Prof B Phalachandra; Prof Y N Shreedhar (UOM); and Dr LancyD'souza Associate Professor, Department of Psychology, Maharaja College, Mysuru who acted as External Resource persons for this programme.

I also thank my research scholars, Mr Milan, Mr Umesha G, Sister Laura, Mr Rajesh Babu and others for their managerial support for the programme

I also thank Head and staff of DEE for all their support services rendered for the programme.

PREFACE

The human beings have the innate tendency of exploration of knowledge and inquisitiveness in knowing the environment in which he/she is living and this gives wider scope for doing research in once owns way. This activity which is continuous, has contributed to the body of knowledge, to understand it in a better way.

The educational research is considered as an applied research as its depends on psychology, sociology, philosophy, and other allied branches of knowledge to be adopted and making it work in the field of education, as it concerns with learner, learning environment, curriculum, teaching and assessment procedures. As learning is a continuous process, and learner is dynamic, it provides ample scopes for studying the various factors that influences the teaching-learning process and ensuring that the learners attain the set learning outcomes. Teacher being the focal point in school system, need to be sensitive to the changing scenarios in the system and make suitable study to know the various intrinsic and extrinsic factors that influences the change. Hence teachers in classrooms are the one who needs to be empowered in taking up research activities that enables them to study the educational problems and find amicable solution through research process in more scientific way.

The southern states during their respective state coordination committee meeting have expressed the desire to train their teacher educators working at DIETs , CTEs and educational functionaries at district and state level require training program in Educational Research methodology so that they can enhance their capacities to carry out research activities in more rigours ways and disseminate the findings to bring changes in education sector as a whole in general and reforms in teaching learning transactions at school level in particular. Also, to utilize the funds reserved to carry out research activities in the state.

To realise these issues, the 21 days course work has been scheduled in two phases. First phase of 11 days will focus on research, preparing research proposal, construction of necessary tools for data collection. The second phase of 10 days will focus on carrying out data analysis and research report activity.

Following are the objectives of the programme:

1. To train the teacher educators and educational functionaries of the states to enhance their research activity

2. To enhance the research activities under (REMS) SSA and RMSA programmes.

Methodology:

Brief discussions on the research related topics by resource persons followed by group work. Analysis of research thesis/ dissertations and making critical comments. More of experiential learning mode was adopted.

About the programme

Though this programme was proposed as training programme of five days of for two spells, it was recommended as to provide it as "course". Though efforts of running certificate programme was visualized by the organization long back and in that direction the modules were developed and field trial was carried out. As an outcome of such activity "CERTIFICATE IN EDUCATIONAL RESEARCH METHODOLOGY' Hand Book Reading Material for Participants, CERM-2014 has been produced under the able Coordinator ship of Dr U Lakshminarayana and RIEM faculty along with external resource persons. This package has been taken as the base for the programme and it was visualized to organize in two phases.

Considering time constraints and essence of imparting research methodology skills to the participants, the programme was designed into two phases. In Phase-I the participants need to be empowered to present their educational research proposals. The participants must have adequate time to carry out their research activities in their respective places and they must come back to Phase-II. In Phase-II due attention is to train them in data analysis using available Statistical packages and finally empowering with Research Report writing. This plan was discussed in the department faculty meeting and it was decided to hold in two spells of 11 days and 10 days. The Phase-I started from 11-22 December 2018. The phase-II started from 1-10 February 2018.

The target group comprised of Educational functionaries who are engaged in Research, Evaluation, Monitoring and Supervision(REMS) in states/ UTs at various levels. Hence personnel from SSA, RMSA, SCERT and DIET were invited. 17 Educational functionaries representing Karnataka-4; Tamilnadu-6; Puducherry-2; Telangana-2; Andhrapradesh-3 participated in the programme. The list of participants is given in Appendix-1. Even Adhoc faculty members also joined the course with prior permission of the competent authorities. The research scholars also participated in the programme to enrich their research knowledge.

Phase-I

The major focus of this phase was to empower the participants with various aspects of Educational Research activities and coming out with research proposal on an identified educational themes/areas/problems.

11-12-2017

In the morning session, the formal registration, inaugural sessions were held. A pre-test was administered to know the educational research knowledge of the participants. In the afternoon session, Dr V Chandranna Assistant professor, DE, discussed on Historical Research by quoting various example's relating to educational historical research. It was followed by Educational research- Meaning, nature and types by Prof Manjula P Rao.

12-12-2017

The Descriptive research- survey and case study was discussed by Dr T V Somashekar in two sessions. Prof Asha KVD Kamath discussed on Experimental Research and it was followed by Review of related Literature by prof V Ramdas.

13-12-2017

The Identification of Research problem and stating research problem was discussed by Prof C S Nagaraju in two sessions. Prof Asha KVD Kamath discussed on Managing Data collection in the afternoon session. Then group work was provided for the group.

14-12-2017

Group work presentation was carried out in the beginning of the day, followed by discussion on types of variable in research, by prof S Ramaa. In the afternoon session Dr T V Somashekar discussed about Normal Probability curve and its significance in research.

15-12-2017

Dr T V Somashekar discussed about Various Sampling techniques, followed by discussion on Preparing Research proposal by Prof M U Paily. In the afternoon session group work activity of analysing research report was carried out by the participants.

16-12-2017

Presentations of research report analysis was done by the participants in the first session. It was followed by Choosing the Research Design by prof B Phalachandra. In the afternoon session, Dr Sujata B H discussed on Observation tool- its construction and administration.

17-12-2017

The participants were asked to do the literature survey and procure necessary information from library for preparations of their research proposals.

18-12-2017

The discussion on Standardisation of tool was carried out by Prof Anil Kumar in morning session. It was followed by group work in the afternoon session

19-12-2017

The session on E-resources for educational research was taken by Mr S Nagaraja, Librarian, RIEM and participants were exposed to various E-resources available for various purposes like- literature survey, Bibliography, open resources etc were demonstrated using various web resources. In the afternoon participants given the task of preparing their research proposals using available resources in the institute.

20-12-2017

Preparation of individual research proposal continued in the morning session and the presentation was taken up in the afternoon session.

21-12-2017

The presentation of proposals continued in the morning session. In the afternoon session, post-test was held for one hour. It was followed by reflections by the participants.

Phase-II

The major focus of this phase was to deal with the "Data Analysis and Report Writing" aspects of Educational Research.

1-2-2018

After the Registration session, Individual's research activities carried out, were discussed through interactive session. In the afternoon sessions, Graphical representation of Data was carried out by Dr T V Somashekar

2-2-2018

In first session, Measures of central tendencies were discussed by taking suitable examples and its interpretations with reference to NPC was also provided. Second session Measures of Variability was discussed by taking data provided by the participants. Its interpretations along with MCT was also provided. Third session, group work was given to compute and interpret the given research data. Fourth session, Measures of correlations was discussed and correlation by rank difference method was deliberated by computing the sampled data. The day was engaged by Dr T V Somashekar.

3-2-2018

In morning sessions, computation of percentiles for the data and its relevance was discussed by Dr T V Somashekar. In the afternoon session, Dr LancyD'souza, Associate professor in psychology, Maharaja College, Mysuru engaged both the sessions by providing the theoretical inputs such as-variables, objectives, hypothesis, testing of hypothesis, level of significance, degrees of freedom, Parametric testing, non-parametric testing, qualitative and quantitative analysis of data, t-test, F-test, ANOVA, Regression analysis, and other software's available for analysis of data.

4-2-2018

In morning sessions, Dr LancyD'souza, provided hands on experience to the participants in using SPSS software in research data analysis by taking various data and doing analysis. Highlighting the sequence of steps to be followed and how to key in various data, carrying out the analysis and obtaining the out view. Also interpreting the result with reference to their significance level and accepting or rejecting the hypothesis and stating the alternative hypothesis, if necessary etc were demonstrated.

5-2-2018

In the first session, Computation of product-moment Correlation was taken up with an example and its interpretations was also done with reference to the given context. In the second session, Significance of Mean difference testing was discussed with considering all cases, that is, when N is equal, not equal, is small, is large, by Dr T V Somashekar. In the afternoon sessions, Mr S Nagaraja Librarian RIEM, discussed on Reference Management tools by using Mendeley software. Demonstrated the use of the software and its advantage in research activities starting from review of related literature to analysis of result and in discussion of results of the study.

6-2-2018

In the first session, discussion of computation of F- test was carried out by taking example. In second session prof V D Bhat, discussed on Qualitative Research and its perspective. In the afternoon session, Computation of Chi-square and its significance in research was discussed followed by group work for analysis of data by non-parametric statistics techniques was assigned.

7-2-2018

In morning sessions Prof M U Paily discussed on Research Report writing and in the afternoon session, prof C G Venkateshamurthy discussed on APA style for citation and referencing.

8-2-2018

Prof Y N Sridhar(Rtd), University of Mysore discussed on Ethical Issues of Research in the first session and it was followed by individual work of finalising of the research report by participants.

9-2-2018

In the morning sessions, the presentations of research report were carried out and in the afternoon, the course-end examination comprising of 50 MCQ were administered to the group. The test items are provided in Appendix-2 Later the answer scripts were exchanged among the participants, the answer key was presented one after the other, discussions were held for clarification of their doubts and answer scripts were valued objectively in the session itself.

10-2-2018

The review of the entire 21 days programme on Educational Research Methodology was done by getting the reflections from the participants.

The Valedictory function was held around 12 noon, Prof Y Sreekanth, principal RIEM presided and Prof MU Paily I/C Head DE, Dr Sujata B H and Dr Chandranna graced occasions. Principal in his presidential remark urged the participants to carry out the unfinished research work, complete it and send us the report, so that all research report could be brought out as compendium by RIEM. The certificates to the participants were distributed on this occasion by principal. The programme ended with vote of thanks to the chair and to the participants by program coordinator Dr T V Somashekar.

PPTs of Training Session

NATURE OF EDUCATIONAL RESEARCH

Manjula P Rao
RIE, Mysuru

MEANING OF RESEARCH

- Research is a systematic process of collecting and analyzing information (data)

  Why ?

- in order to increase our understanding of the phenomenon with which we are concerned or interested.
- answer to a question,
- the resolution of a problem,
- or a greater understanding of a phenomenon

RESEARCH AS AN ORGANIZED SEARCH FOR KNOWLEDGE HOW?

- Constitution of the environment
- Study of relationships gives a clear understanding of the environment
- Knowledge of relationships described by - hypotheses, laws and theories
- Involves inquiry - planning- execution-reporting

WHAT RESEARCH IS NOT.....

- Research is not mere information gathering
- Research is not mere transportation of facts from one location to another.
- Research is not merely rummaging for information.
- Research is not a catchword used to get attention.

CHARACTERISTICS OF RESEARCH

- Research originates with a question or problem.
- Research requires a clear articulation of a goal.
- Research follows a specific plan of procedure.

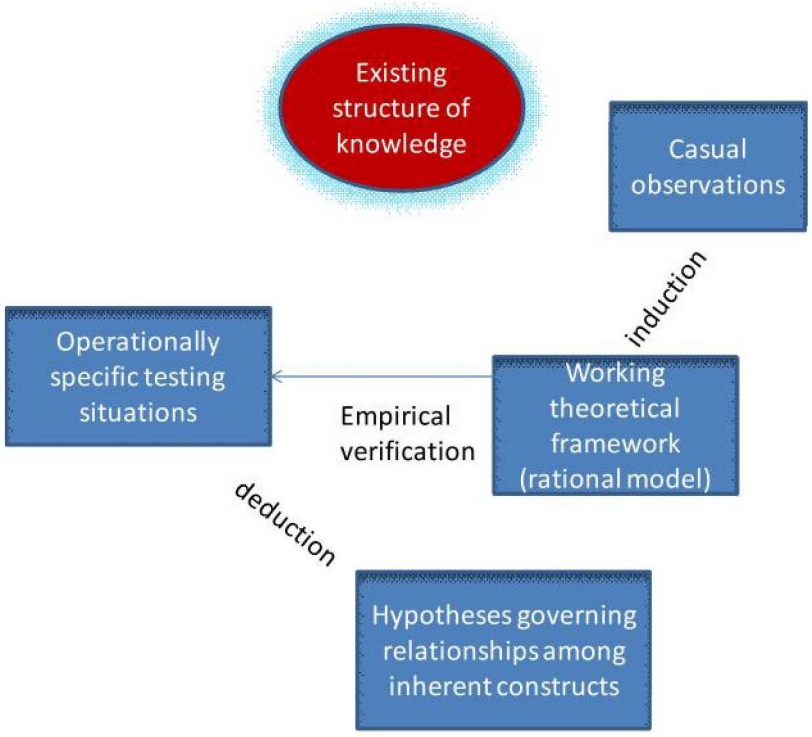
- Research usually divides the principal problem into more manageable sub problems.
- Research is guided by the specific research problem, question, or hypothesis.
- Research accepts certain critical assumptions.
- Research requires the collection and interpretation of data in attempting to resolve the problem that initiated the research.
- Research is, by its nature is cyclical.

HISTORICAL PERSPECTIVE OF KNOWLEDGE GENERATING METHODS

- Assumptions underlying quest for knowledge
- Personal experience
- empiricism
- Authority
- Tradition
- Deduction
- Induction
- Synthesis of induction and deduction: scientific method

SCIENTIFIC METHOD OF KNOWLEDGE GENERATION

- Two phases of scientific method
- Scientific method as logical empiricism
- Scientific method as a cyclic process of knowledge generation
- Knowledge generation -never a finished enterprise
- Knowledge publicly verifiable
- Scientific method and social sciences



POSITIVISM

- derives its meaning from an acceptance of natural science as the paradigm of human knowledge.
- development of the 'scientific method' as a means of knowledge
- four assumptions on which positivism rests
- Determinism:
- Empiricism:
- Parsimony:
- Generality:

PHENOMENOLOGY

- as a method in philosophy that begins with the individual and his conscious experience and tries to avoid prior assumptions and prejudices. Phenomenology examines the phenomena as experienced by the individual.
- believes that any phenomenon obtained because it is experienced. The experience provides meaningfulness to the phenomenon.

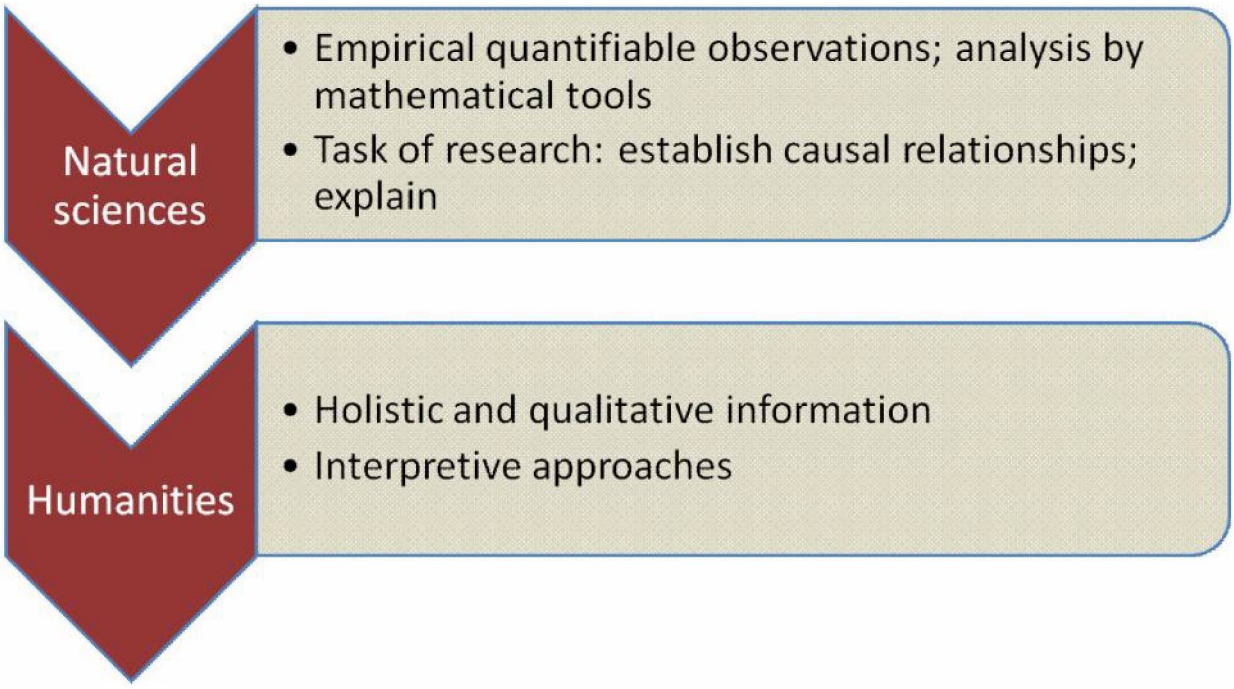
ETHNOGRAPHY

- Ethnography is the study of people in natural setting by means of methods which capture their social meanings and day-to-day activities.
- is concerned with how people make sense of their everyday life.
- Need for participant observation

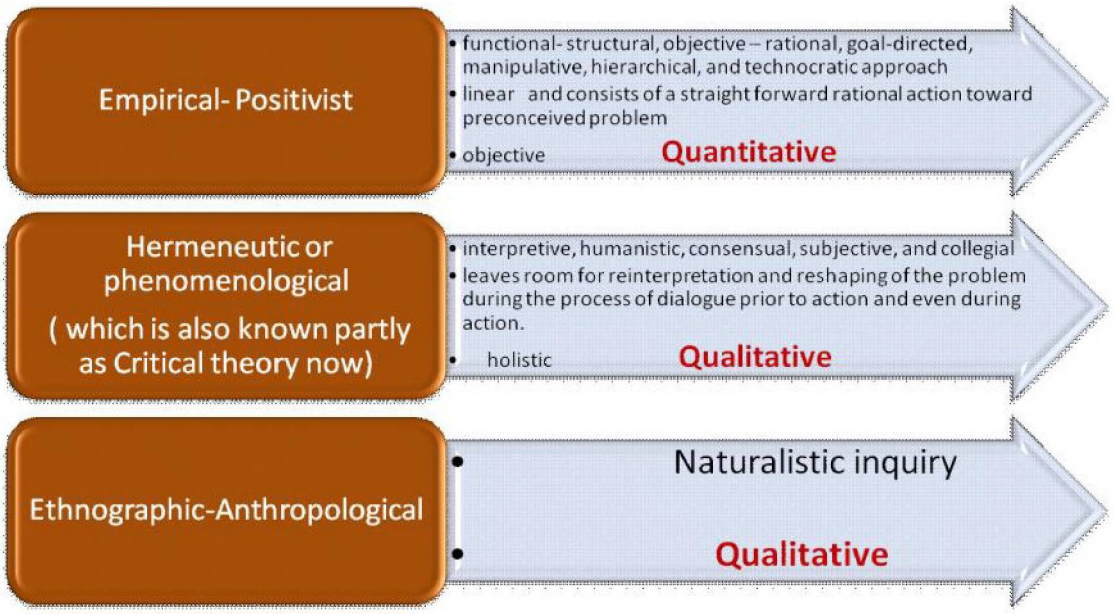
GROUNDED THEORY

- This approach helps the researcher to generate a theory from the data he collects while being in the field.
- Unlike positivistic approach where the researcher collects data with a pre-determined theoretical framework and hypothesis, this approach advocates gathering data without forcing either preconceived questions or frameworks upon it.
- Grounded theorists do not give much stress on data collection methods rather greater emphasis is laid on data analysis strategies.

20TH CENTURY: PARADIGMS IN EDUCATIONAL RESEARCH - ANGLO SAXON COUNTRIES



TWO MAIN PARADIGMS IN EDUCATIONAL RESEARCH- THEIR BASES



TYPES OF RESEARCH

- Basic research
- Developmental research
- Applied research
- Action research

BASIC RESEARCH (BR)

- mainly aimed at understanding stable relationships existing among the innumerable variables in an educational situation
- to understand the patterns of interaction among the variables in an educational setting, which may be relatively situation free.
- Examples: teacher behaviour, learning outcomes, personality characteristics of students and achievement etc
- to arrive at generalizations in the form of laws, principles, theories

APPLIED RESEARCH

- are concerned with evolving workable models, inputs etc, by the application of various principles and establishing their effectiveness.
- encompasses studies designed to formulate practical paradigms, models etc, through its application of theories, laws, and principles generated by the basic researches.
- Such an application of laws and theories is essential to facilitate effective practice, which is field, based.
- Eg: Programmed Learning; activity based learning; constructivism;

Applied research (contd....)

- attempts are made to validate the potential of various educational devices in several conditions;
- conducted in manipulated conditions utilizing experimental designs.
- significance of A R : to evolve operative models, which although not universally applicable, would form practical framework for researchers in real educational situations.

DEVELOPMENTAL RESEARCH

- is application of theoretical knowledge into practice.
- But it differs from AR in the fact that they are conducted in real educational settings and they make attempts to study the functioning of educational inputs in the context of all the variables operating naturally in the setting.
- Longitudinal studies to study social development etc.

Devt research (contd....)

- Aim is to study the operation of practical paradigms in specific situations.
- provide overriding importance to situational consideration as the emphasis of such studies is on predictability and feasibility.
- As the basis in developmental studies is practicability in real situation, they are conducted without exercising any control on the condition prevailing setting.

- Eg: teaching through new innovative methods, focus should be no t only on those variables directly involved in the educational process, but also on the related subsystems of instruction such as administration, planning, institutional organization, resources etc. and their influence on instruction.

Assessment and evaluation	Quality of teacher education
School management	Empowerment of teachers
Classroom processes	Role of community in functioning of schools
Achievement studies	Supervision and monitoring of schools
Educational technology	Evaluation of in-service training programmes
ICT in learning	Health and physical education
Language education	Socio and personal development of children
Science education	Mulltigrade system- various issues and problems
Mathematics education	Innovative teaching practices and
Multilingual education	Leadership qualities of school administrators.
Value education	Learning problems in different subject areas
Environmental education	Programme evaluation
Evaluation of textbooks and other instructional materials	
Guidance and vocational counselling	
Inclusive education	
Teacher competence	
Use of TLM on learning	

ACTION RESEARCH

- AR is research undertaken by practitioners in order that they may attempt to solve their local, practical problems by using the method of science.
- It is concerned with a local problem and is conducted in a local setting.
- It is not concerned with whether the results are generalisable to any other setting and is not characterized by the same kind of control evidence .
- is focused on immediate applications.

PURPOSE OF ACTION RESEARCH

- is to solve classroom problems through the application of scientific methods.
- The primary goal is the solution of a given problem, not contribution to field
- to improve school practices and at the same time, to improve those who try to improve the practices,
- to combine the research processes, habits of thinking, ability to work harmoniously with others, and professional spirit.

IDENTIFICATION OF RESEARCH PROBLEM

EDUCATIONAL RESEARCH
PROF C S NAGARAJU

ORIGIN OF RESEARCH PROBLEM

- It can be an issue

  * Teaching of English
- A phenomenon

  * Truancy/absenteeism
- A concern

  * Low levels of learning in rural schools

WHAT IS A RESEARCH PROBLEM?

- It is a systematic approach to gather information/facts on different aspects of an issue/phenomenon/concern, organize the inter relationships of facts and draw conclusions and implications leading to new knowledge/explanation/solution depending upon the origin of the problem.

HOW RESEARCH PROBLEM ORIGINATES?

- Personal experience
- Practical Experience
- Experts
- Previous researches/research literature
- Media
- Existing theories
- Exposure to field situation

CRITERIA OF A GOOD RESEARCH PROBLEM

- Significance
- New Knowledge (original)
- Feasible :Practicable in terms of time and resources, Facility in fashioning/ acquiring needed tools and equipment
- Personal interest and competence
- Ethical issues (eg: testing products using experimental designs)

FORMULATION

- Selection of broad issue/concern/phenomenon
- Identification of problematic strands based on Personal interest and involvement
- Study of available knowledge
- Refining the problem by identifying different facets of the broad problem informed by the review of literature
- Reviewing the problem using criteria of good research problem

ARRIVING AT THE STATEMENT OF THE PROBLEM

- Formulation of the statement of the problem Characteristics Precise and leading to the objectives of the study and to the process of carrying out research activities.

EDUCATIONAL RESEARCH - APPROACHES

12th Dec. 2017

Asha K VD Kamath

Former Faculty

RIE, Mysuru

EXPERIMENTAL METHOD

* It is application and adaptation of classical method of experimentation.
* It is the description and analysis of what will be, or what will occur, under carefully controlled conditions.
* It is to identify the conditions underlying the occurrence of a given phenomena.
* Researchers make deliberate and systematic manipulations of treatment/ environmental conditions and observe how the condition or the behaviour of the subject is affected or changed.

EXPERIMENTAL METHOD- CHARACTERISTICS

Control: Removing or minimizing the influence of variables which are not of direct interest to the researcher.

Manipulation: Deliberate operation of independent variable on the subjects of experimental group, to observe its effect.

Observation: Observing the effect of manipulation of independent variable on the dependent variable.

Replication: Conducting more than one experiment within the framework of the same experimental design.

EXPERIMENTAL DESIGNS

* It is the blue print of the procedures that enable the researcher to arrive at conclusions about relationships between independent and dependent variables. Designs
  - One group pre test post test design
  - Two groups static design
  - Two groups randomized subjects - post test only
  - Two groups randomized subjects - pre test post test

SURVEY METHOD

* It is followed to collect detail description of certain existing phenomena.
* Its purpose is to find out current conditions and practices and to make more intelligent plans for improving them.

Types

School Surveys

Job Analysis

Public Opinion Survey

Social/ Community Surveys

SURVEY METHOD- PROCESS

- Question
- Conceptual Framework
- Sample
- Tools
- Data Collection
- Tabulating Data
- Data Analysis
- Findings
- Educational Implications

ACTION RESEARCH

- It is an on the spot research aimed at the solution of an immediate classroom problem.
- It is a process by which practitioners attempt to study their problems scientifically in order to guide, correct and evaluate their decision and action for improving their current practices.

ACTION RESEARCH- CHARACTERISTICS

- Practice based
- Conducted by the practitioners
- Relevant to the actual situation
- Simple - to conduct and analyze
- Limited application
- Flexible
- Less time and cost

ACTION RESEARCH - STEPS

- Identification of problems
- Selection of a problem
- Stating the problem
- Formulating the objectives
- Defining procedure of data collection
- Data collection
- Tabulation and analysis of data
- Interpretation of the results
- Drawing conclusions

AN INTRODUCTION TO QUALITATIVE RESEARCH

Prof. V.D. Bhat

APPROACHES TO RESEARCH

- **POSITIVIST**
  - Objective, stable reality governed by context-free cause-effect relationships
  - Scientific, evidence-based, deductive knowledge
  - Research methods structured, replicable, experimental; results are quantifiable

- **INTERPRETIVE**
  - Subjective, socially constructed reality, which must be interpreted
  - Knowledge influenced by multiple realities, sensitive to context; research aims to uncover the meaning of phenomena
  - Researcher is a co-creator of meaning, brings own subjective experience to the research, methods try to capture 'insider' knowledge, research conducted in natural settings

THE PROCESS OF QUALITATIVE RESEARCH
TYPES OF QUALITATIVE RESEARCH DESIGNS

- The case study
- Ethnography
- Grounded theory
- Phenomenology
- Participatory research

The Case Study

- Interest is in an individual case rather than in a method of inquiry
- Data may be quantitative or qualitative
- Focus on what can be learned from the individual case
- A 'case' may be simple or complex
  - Single child
  - Class of children

TYPES OF CASE STUDY

- Intrinsic

  –The case itself is of interest

- Instrumental case study

  –A particular case is studied to provide insight into an issue or to refine a theory

- Collective case study

  –A number of cases are studied jointly in order to investigate a phenomenon (instrumental study extended to several cases)

Ethnography

- Rooted in anthropology
- Also called participant observation/ naturalistic enquiry
- Ethno = people
- Graphy = describing something
- Characterised by immersion

Role of the observer

- Complete observer
  - Behind one-way mirror, invisible role
- Observer as participant
  - Known, overt observer
- Participant as observer
  - Pseudo-member, research role known
- Complete participant
  - Full membership, research role not known

Grounded Theory

- Rooted in social sciences
- Emphasises the development of theory
- Which is grounded in data systematically collected and analysed (constant comparative analysis to produce substantive theory)
- Theory must be faithful to the evidence
- Looks for generalisable theory - by making comparisons across situations
- Focus is on patterns of action and interaction

THE STEPS IN DESIGNING A QUALITATIVE STUDY

1 Establish the general problem to be investigated Of interest to the researcher

2 Stating the purpose of the study Based on problem analysis Arises from previous studies Guided by literature review

3 Develop a conceptual/theoretical framework for the study

4 Formulate general and specific research questions (aims and objectives)

5 Select a qualitative research design

6 Select a sampling strategy Establish site of the research Selection of participants

7 Ensure trustworthiness of the study

8 Determine data collection methods and develop data collection tools

9 Establish how data will be managed and analysed

10 Interpretation and discussion of findings

11 Prepare research report

SAMPLING IN QUALITATIVE RESEARCH

CONSIDERATIONS IN SAMPLING:

- Purpose of qualitative research
  - Produce information-rich data
  - Depth rather than breadth
  - Insight rather than generalisation
- Conceptual rather than numerical considerations
  - Choose information-rich sites and respondents

COMMON SAMPLING APPROACH

- Purposive sampling
  - Not haphzard
  - Select information-rich cases
  - Not the same as convenience sampling

PURPOSIVE SAMPLING STRATEGIES

- Deviant case sampling
  - Information rich cases that are unusual (e.g. In Search of Excellence)
- Intensity sampling
  - Excellent examples of the phenomenon of interest but not highly unusual cases
- Heterogenous sampling
  - Sample people with diverse characteristics to see whether there are common patterns
- Homogenous samples
  - Describe a particular sub-group in depth
- Typical case sampling
  - To describe and illustrate what is typical to a particular setting
- Snowball sampling
  - Through informants identify others who know a lot about the issue
- Opportunistic sampling
  - Taking advantage of on-the-spot opportunities

CONSIDERATIONS IN SAMPLE SIZE

- Saturation
- Redundancy
- Minimum samples based on expected reasonable coverage, given the purpose of the study and constraints Triangulation
- Methods – interviews, observations, document analysis
- Sources – public/private, over time, different perspectives
- Analysts – multiple analysts, independent analysis and compare findings
- Theories – to understand how diferent assumptions affect findings, illuminate inconsistencies

DATA COLLECTION METHODS

OBSERVATION

- Purpose of observation
  - Describe the setting
  - First-hand experience – assists with analysis
  - See what is normally taken for granted or not easily spoken about
  - Confirm perceptions of respondents
- Requires training, preparation and discipline
- Develop an observation checklist

TYPES OF OBSERVATION

- Observer as outsider - unobtrusive
- Participant observation

SOURCES OF OBSERVATIONAL DATA

- The setting
- The human and social environment
- Historical information
- Planned activities
- Informal interactions and unplanned activities
- 'Native' language
- Nonverbal communication
- Unobtrusive observations
- Documents
- What does not happen
- Oneself

INTERVIEWING

- Purpose of interviews
  - Elicit feelings
  - Thoughts
  - Opinions
  - Previous experiences
  - The meaning people give to certain events

TYPES OF INTERVIEWS

- Informal conversational interview
- General interview guide approach
- Standardised open-ended interview
- Closed fixed-response interview
- Combination of approaches

TYPES OF QUESTIONS

- Experience and behaviour questions
- Opinion and value questions
- Feeling questions
- Knowledge questions
- Background/demographic questions

FOCUS GROUP DISCUSSION

- Purpose of FGD
  - Get a variety of perspectives/reactions to a certain issue
  - In a short time
  - Mainly for eliciting opinions, values, feelings

ADVANTAGES

- Cost-effective
- Quality of data enhanced by group participants
- Can quickly assess the extent to which there is agreement or diversity on an issue
- Enjoyable for participants

LIMITATIONS

- Restricts number of questions that can be asked
- Responses by each participant may be constrained
- Requires group process skills
- Silences the minority view
- Confidentiality not assured
- Explores major themes, not subtle differences
- Outside of natural setting

HOLDING A FGD

- Homogenous
- Strangers
- 6-10 people
- 1-2 hours
- 2 FGD per type of respondent
- Moderator and note taker
- Prepare discussion guide

QUALITATIVE DATA ANALYSIS

STAGES IN QUALITATIVE DATA ANALYSIS

- Qualitative data analysis is a non-linear / iterative process

  - Numerous rounds of questioning, reflecting, rephrasing, analysing, theorising, verifying after each observation, interview, or Focus Group Discussion

- **<u>During</u> data collection**

  – Reading – data immersion – reading and re-reading

  – Coding – listen to the data for emerging themes and begin to attach labels or codes to the texts that represent the themes

- **<u>After</u>** data collection

  – Displaying – the themes (all information)

  – Developing hypotheses, questioning and verification

  – Reducing – from the displayed data identify the main points

TOOLS AND TECHNIQUES FOR QUALITATIVE RESEARCH

Dr Sujata B. Hanchinalkar

Assistant Professor
Regional Institute of Education(NCERT)
Mysuru

For all the research we need certain instruments to gather new facts or to explore new fields.

"The instruments thus employed as means for collecting data are called tools".

Success of research depends on tool

The systematic way and procedure by which a complex or scientific task is accomplished is known as the technique.

Techniques is the practical method, skill or art applied to a particular task.

Tools are

- essential to collect factual material or data unknown or untapped so far.
- They can be obtained from many sources,
- direct or indirect.
- It is necessary to adopt a systematic procedure to collect essential data.
- Relevant data, adequate in quantity and quality should be collected.

  They should be sufficient, reliable and valid.
- For checking new, unknown data required for the study of Problem

The major tools of research in education can be classified broadly as below

A. INQUIRY FORMS

Questionnaire
Checklist
Score-card
Schedule
Rating Scale
Opinionnaire
Attitude Scale

B. OBSERVATION

C. INTERVIEW

D. SOCIOMETRY

E. PSYCHOLOGICAL TESTS

Achievement Test

Aptitude Test

Intelligence Test

Interest inventory

Personality measures etc.

Observation offers the researcher a distinct way of collecting data. It does not rely on what people say they do, or what they say they think. It is more direct than that. Instead, it draws on the direct evidence of the eye to witness events first hand. It is a more natural way of gathering data. Whenever direct observation is possible it is the preferable method to use. Observation method is a technique in which the behaviour of research subjects is watched and recorded without any direct contact. It involve the systematic recording of observable phenomena or behaviour in a natural setting

Purpose :

To collect data directly.

To collect substantial amount of data in short time span.

To get eye witness first hand data in real like situation.

To collect data in a natural setting.

• Characteristics :

• distinction between observation as a scientific tool and the casual observation of the man in the street.

• An observation with the following characteristics will be scientific observation.

Observation is systematic.

It is specific.

It is objective.

It is quantitative.

The record of observation should be made immediately.
Expert observer should observe the situation.
It's result can be checked and verified.

Types of Observation : On the basis of the purpose of observation may be of varied type like:

• Structured and Unstructured

• Participant and Non-participant

Structured and Unstructured Observation :

• early large stage of an investigation,

• maximum flexibility in observation

• gives true picture of the phenomenon as a whole.

• If we restrict the observation

• Than the risk of overlooking some of the more crucial aspects.

• The first stage of observation wide and unstructured and

• as the investigation proceeds observation gets restricted and structured.

PARTICIPANT AND NON-PARTICIPANT OBSERVATION:

Participant observation: the observer becomes more or less one of the groups under observation and shares the situation as a visiting stranger, an attentive listener, an eager learner or as a complete participant observer, registering, recording and interpreting behaviour of the group.

Eg: to study about criminals participating with person sometime.

It gives a better in sight into the life. Therefore it has a built in validity test.

It's disadvantages are that it is time consuming As he develops relationship with the members, there is a chance of lousing his neutrality, objectivity and accuracy to rate things as they are

non-participant observation: the observer observes through one way screens and hidden microphones. The observer remains aloof from group. He keeps his observation as inconspicuous as possible. The purpose of non-participant observation is to observe the behaviour in a natural setting. The subject will not shift

his behaviour or the will not be conscious that someone is observing his behaviour.

Non-participant observation is used with groups like infants, children or abnormal persons.

It permits the use of recording instruments and the gathering of large quantities of data.

- Steps of Effective Observation:
- As a research tool effective observation needs effective
- Planning
- Execution
- Recording and
- Interpretation

Planning:

- Sample -adequate.
- Units of behaviour to be observed should be clearly defined.
- Methods of recording should be simplified.
- Detail instruction should be given to observers if more than one observer is employed to maintain consistency.

Too many variables should not be observed simultaneously.

- Excessively long period of observation without rest period should be avoided.
- Observer should be fully trained and well equipped.
- Records of observation must be comprehensive.

Execution :

- A good observation plan lends to success only when followed with skill and expert execution.
- Expert execution needs:
- Proper arrangement of special conditions for the subject.

- Assuming the proper physical position for observing.
- Focusing attention on the specific activities or units of behaviour under observation.
- Observing discreetly the length and number of periods and internals decided upon.
- Handling well the recording instruments to be used.
- Utilising the training received in terms of expertness.

Recording:

The two common procedures for recording observations are:

1. Simultaneous
2. Soon after the observation

Which methods should be used depend on the nature of the group?

The type of behaviour to be observed.

Both the method has their merits and limitations.

The simultaneous form of recording may distract the subjects while after observation the observer may distract the subjects while after observation the observer may fail to record the complete and exact information.

Therefore for a systematic collection of data the various devices of recording should be used.

They are like - checklist, rating scale and score card etc.

Interpretation:

Interpretation can be done directly by the observer at the time of his observation.

Where several observers are involved, the problem of universality is there.

Therefore, in such instances, the observer merely records his observations and leaves the matter of interpretation to an expert that is more likely to provide a unified frame of reference.

It must of course, be recognized that the interpreter's frame of reference is fundamental to any interpretation and it might be advisable to insist on agreement between interpreters of different background.

Limitations of Observation :

- The limitations of observation are:
- Establishing validity is difficult.
- Subjectivity is also there.
- It is a slow and laborious process.
- It is costly both in terms of time and money.
- The data may be unmanageable.
- There is possibility of biasness
- These limitations can be minimized by systematic observation as it provides a framework for observation

Advantages of Observation :

Data collected directly Systematic and rigorous Substantial amount of data can be collected in a relatively short time span.

Provides pre-coded data and ready for analysis.

Inter observer reliability is high.

STANDARDIZATION OF RESEARCH INSTRUMENTS

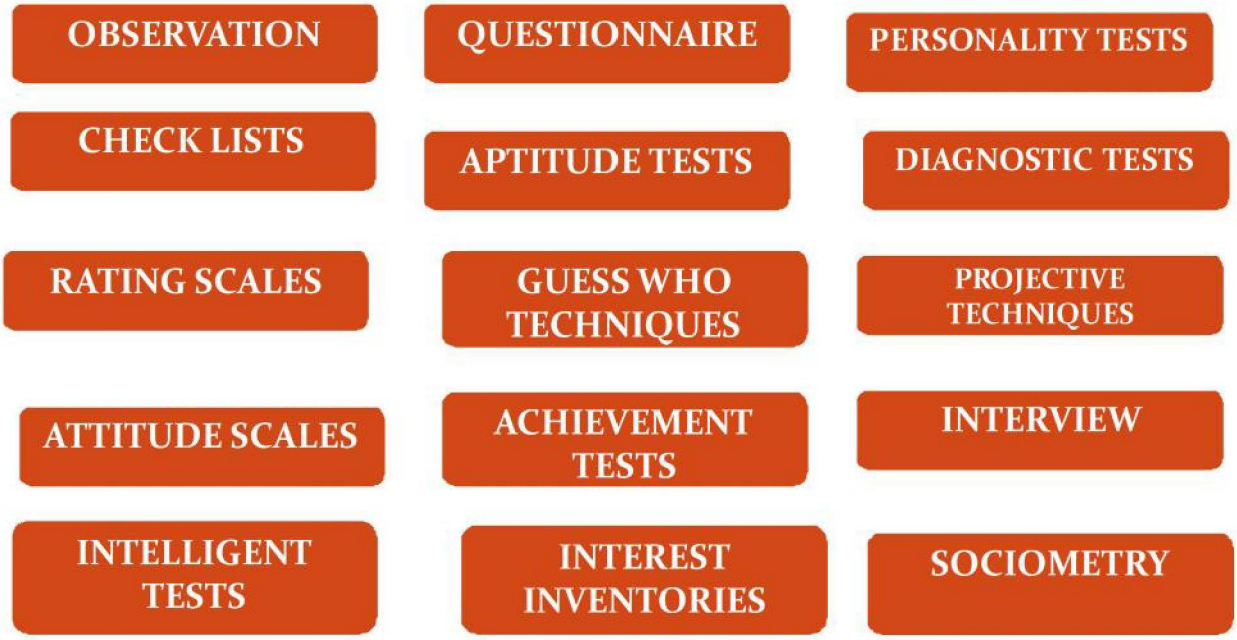
ANIL KUMAR K

RESEARCH INSTRUMENTS

- TOOLS/TESTS
- TECHNIQUES

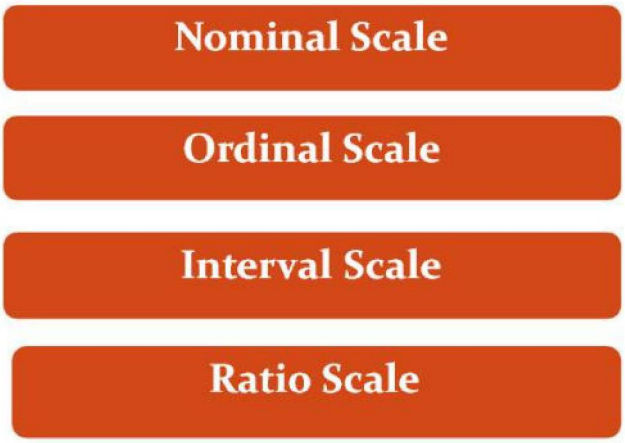
RESEARCH INSTRUMENTS

TOOLS & TECHNIQUES



HOW TO SELECT AN APPROPRIATE TOOL

SELECTION OF A TOOL IS BASED ON THE NATURE OF THE ATTRIBUTE/VARIABLE. THE FOUR TYPES OF MEASUREMENT SCALES ARE:



PHYSICAL MEASUREMENT VS BEHAVIOURAL MEASUREMENTS

Physical Measurement	Measurement in Behavioural Sciences
1. It is an absolute measurement.	1. It is a relative measurement.
2. The reference point is zero.	2. It has no absolute, normative or arbitrary zero. The reference point is group performance.
3. It has definite or certain order.	3. It has recognizable order.
4. Though ultimate perfection is not possible but defined and certain measurement is possible.	4. Perfection is not possible.
5. It has the fixed units for measuring a trait. It is constant throughout the measurement. Units are fundamental and of definite value.	5. There is no fixed unit for measuring any trait or variable. It varies during the process of measurement. Units are derived and of indefinite value.
6. The data are interpreted directly.	6. The raw data are meaningless but these have to be transformed into standard scores for interpretation.
7. The trait is directly measured.	7. The trait is indirectly measured with the help of behaviours.
8. It is perfectly objective and valid.	8. It is a subjective measurement but tries to make it objective and valid.
9. There are fixed tools for measuring the separate traits.	9. There is no fixed or final measuring instrument for a single trait or variable.
10. It is almost at ratio-scale.	10. It is at nominal, ordinal and interval scales.
11. It has a great precision.	11. It has less precision.

STANDARDIZED INSTRUMENTS

Standardized instruments/tests are carefully constructed tests with uniform content, which have uniformity of procedure in administering, scoring, and interpreting the test results.

A standardized test is one which passes through the following process:

(i) Standardization of the content and questions:

(ii) Standardization of the method of administration:

(iii) Standardization of the scoring procedure:

(iv) Standardization of interpretation:

Characteristics of a Standardized Instrument

- Validity
- Reliability
- Objectivity
- Norms
- Practicability/Usability
- The Process of Standardization: Item Analysis

VALIDITY

- Validity refers to the extent to which a test measures what it purports to measure.
- Validity is the evidence for inferences made about a test score.
- Validity deals with the accuracy of the measurement.
- Does the measure what it is suppose to measure?

TYPES OF VALIDITY MEASURES

- Face validity
- Construct validity
- Content validity
- Criterion validity

FACE VALIDITY

Does the instrument appear to measure what it is supposed to measure?

Face validity refers to the extent to which a test appears to measure what it is intended to measure. A test in which most people would agree that the test items appear to measure what the test is intended to measure would have strong face validity.

CONTENT VALIDITY

How well elements of the test relate to the content domain?

Content validity related with the adequacy and representativeness of learning outcomes to be measured. - is assessed by systematically comparing a test item with instructional objectives to see if they match. Content validity evidence does not yield a numerical estimate of validity evidence.

CRITERION RELATED VALIDITY

How well one measure predicts an outcome for another measure?

Criterion validity is the extent to which a measure is related to an outcome. Criterion Related Validity is established by correlating test scores with an external standard or criterion to obtain a numerical estimate of validity evidence.

TYPES OF CRITERION VALIDITY

The Two Types of Criterion Validity are:

1. Predictive Validity
2. Concurrent Validity

PREDICTIVE VALIDITY

Predictive Validity- involves the use of criterion and a predictor. - determined by correlating test scores with a criterion measure collected after a period of time passed.

For example, A student takes the NATA. The NATA has been shown as an effective tool (i.e. it has criterion validity) for predicting how well a student will perform in Architect graduate studies.

CONCURRENT VALIDITY

- Concurrent Validity refers to the extent to which the results of a particular test, or measurement, correspond to those of a previously established measurement for the same construct.
- For example, testing a group of students for intelligence, with an IQ test, and then compare with the new intelligence test, if the results are same, then the test has high concurrent validity.

CONSTRUCT RELATED VALIDITY

Does the test measure the 'human' theoretical construct or trait.

CONSTRUCT-RELATED VALIDITY - Refers to how well a performance on a particular set of tasks or components can be explained in terms of some psychological construct or trait. -determined by finding whether the test results corresponds with scores on other variables as predicted by some rationale or theory.

FACTORS AFFECTING VALIDITY

- Unclear directions
- Difficult reading vocabulary and sentence structure
- Ambiguity in statements
- Inadequate time limits
- Inappropriate level of difficulty
- Poorly constructed test items

- Test items inappropriate for the outcomes being measured
- Tests that are too short
- Improper arrangement of items (complex to easy?)

RELIABILITY

- Reliability is synonymous with consistency. It is the degree to which test scores for an individual test taker or group of test takers are consistent over repeated applications.
- The consistency of test scores is critically important in determining whether a test can provide good measurement.
- No psychological test is completely consistent, however, a measurement that is unreliable is worthless.

TYPES OF RELIABILITY

- There are several ways that measuring reliability can be determined, depending on the type of measurement the supporting data required. They include:
- Test-retest Reliability
- Split-half Methods - Odd-even Reliability
- Alternate Forms Methods
- Inter rater Reliability
- Internal Consistency

TEST-RETEST RELIABILITY

- Test-retest reliability is usually measured by computing the correlation coefficient between scores of two administrations of the same test to the same group.
- The amount of time allowed between measures is critical.
- The shorter the time gap, the higher the correlation; the longer the time gap, the lower the correlation.
- Optimum time between administrations is 2 to 4 weeks.

SPLIT HALF RELIABILITY

• Split Half - refers to determining a correlation between the first half of the measurement and the second half of the measurement (i.e., we would expect answers to the first half to be similar to the second half). Odd-Even - refers to the correlation between even items and odd items of a measurement tool.

• In this sense, we are using a single test to create two tests, eliminating the need for additional items and multiple administrations.

PARALLEL/ALTERNATE FORMS METHOD

• Parallel/Alternate Forms Method - refers to the administration of two alternate forms of the same measurement device to the same group one after the other and then comparing the scores.

• Both forms are administered to the same person and the scores are correlated. If the two produce the same results, then the instrument is considered as having reliability.

INTER RATER RELIABILITY

• Inter-rater reliability means that if two different raters scored the scale using the scoring rules, they should attain the same result.

• Inter-rater reliability is usually measured by computing the correlation coefficient between the scores of two raters for the set of respondents.

• Here the criterion of acceptability is pretty high (e.g., a correlation of at least, but what is considered acceptable will vary from situation to situation.

INTERNAL CONSISTENCY

• Internal Consistency- Measures the reliability of a test solely on the number of items on the test and the inter correlation among the items. Therefore, it compares each item to every other item.

Cronbach's Alpha:

0.80 to 0.95 = Excellent

0.70 to 0.80 = Very Good

0.60 to 0.70 = Satisfactory

<0.60 = Suspect

FACTORS AFFECTING RELIABILITY

- Administrator Factors
- Number of Items on the instrument
- The Instrument Taker
- Heterogeneity of the Items
- Heterogeneity of the Group Members
- Length of Time between Test and Retest

A TOOL WHICH IS RELIABLE AND VALID

OBJECTIVITY

Objectivity is the state of being fair, without bias or external influence.

- If the test is marked by different people, the score will be the same . In other words, marking process should not be affected by the marking person's personality.
- Not in?uenced by emotion or personal prejudice. Based on observable phenomena; presented factually: an objective appraisal.
- Measures an individual's characteristics in a way that is independent of rater's bias or the examiner's own beliefs

UNDERSTANDING NORMS

Understanding Norms

In a psychometric context, norms are the test performance data of a particular group of test takers that are designed for use as a reference for evaluating or interpreting individual test scores"

Norms are a list of scores and corresponding percentile ranks, standard scores, or other transformed scores of a group of examinees on whom a test was standardized.

TYPES OF NORMS: PERCENTILES

- Percentiles Norms - refer to a distribution divided into 100 equal parts. - refer to the score at or below which a specific percentage of scores fall.
- Ex. A student got 90% rank of NATA exam. What does this mean?
- It means that 90% of his/her classmates scored lower than his/her score or 10% of his/her classmates got score above his/her score.

AGE NORM VS GRADE NORMS

- Age Norms (age-equivalent scores) -"indicate the average performance of different samples of test takers who were at various ages at the time the test was administered"
- Grade Norms -Used to indicate the average test performance of test takers in a specific grade.

NATIONAL VS LOCAL NORMS

- National Norms -Derived from a standardization sample nationally representative of the population of interest.
- Local Norms -Are derived from the local population's performance on a measure. - Typically created locally (i.e., by guidance counselor, personnel director, etc.)

ITEM ANALYSIS

- The item analysis done by calculating

  (i) Item Difficulty Index

  • (ii) Item Discrimination Power/index

  Item Difficulty index

The proportion of students in class who got an item correct. The larger the proportion , the more students who have learned the content measured by the item.

ITEM DISCRIMINATION INDEX

- A basic measure of the validity of an item.
- A measure of an item's ability to discriminate between those who scored high on the total test and those who scored low.
- It can be interpreted as an indication of the extent to which overall knowledge of the content area or mastery of the skill is related to the response on an item.

DISTRACTER ANALYSIS

- In addition to examining the performance of a test item, teachers are often interested in examining the performance of individual distracters (incorrect answer options) on multiple-choice items

- By calculating the proportion of students who chose each answer option, teachers can identify which distracters are working and appear to be attractive to students who do not know the correct answer, and which distracters are simply taking up space and not being chosen by many students

THE PURPOSE OF DISTRACTOR ANALYSIS

- To eliminate blind guessing which results in a correct answer purely by chance (which hurts the validity of a test item), teachers want as many plausible distracters as is feasible.

THE PROCESS OF ITEM ANALYSIS

- Arrange the test scores from highest to lowest.
- Select the criterion groups Identify a High group and a Low group.

- The High group is the highest-scoring 27% of the group and the Low group is the lowest scoring 27%.
- For each item, count the number of examinees in the High group who have correct responses. Do a separate, similar procedure for the low group.

YOUR OBSERVATIONS & COMMENTS

- 5. Solve for the difficulty index of each item
- The larger the value of the index, the easier the item. The smaller the value, the more difficult is the item.
- Scale for interpreting the difficulty index of an item:
- Below 0.25 item is very difficult
- 0.25 - 0.75 item is of average difficulty or item is rightly difficult
- Above 0.75 item is very easy

EXAMPLE FOR DISTRACTOR ANALYSIS

- Ex: Item # 5 of the Multiple Choice test, D is the correct option.

	A	B	C	D*	E		Total
• Upper		1	1	0	9	1	12
• Group							
• Lower		3	1	4	4	0	12
• Group							

INDEX OF DISCRIMINATION

<u>The following can be used to interpret the index of discrimination.</u>

- **Item Discrimination Power/Index**
- **0.40 – 1.0 High The item is very good 0.30 -0.39 Moderate Reasonably good can be improved**
- **0.20 – 0.29 Moderate In need of improvement**
- **< 0.20 Low Poor, to be discarded**

GUIDELINES FOR CONSTRUCTION OF RATING SCALES

- Index of Item Difficulty = (Hc + Lc) / 2N = (9+4)/2(12)=.54 ----the item is rightly difficult
- Index of discrimination Power = (Hc -Lc)/N=(9-4)/12=.42 ---- high index of discrimination ---- the item has the power to discriminate Hence, item number 5 has to be retained.
- Distracter analysis: A and C are good distracters
- Guidelines for Construction of Rating Scales
- Index of Item Difficulty = (Hc + Lc) / 2N = (9+4)/2(12)=.54 ----the item is rightly difficult
- Index of discrimination Power = (Hc -Lc)/N=(9-4)/12=.42 ---- high index of discrimination ---- the item has the power to discriminate Hence, item number 5 has to be retained.
- Distracter analysis: A and C are good distracters

YOUR OBSERVATIONS & COMMENTS

THANK YOU

MANAGING DATA COLLECTION

13th Dec. 2017

Asha K VD Kamath
Former Faculty
RIE, Mysuru

Data: They are distinct pieces of information, usually formatted in a special way.

Data have to be true, relevant and reliable.

They are used as a basis for reasoning, discussion or calculation.

Forms of Data: Data can exist in variety of forms

- numbers
- Text on piece of paper Facts stored in persons' mind

Sources of Data: primary sources and secondary sources

Preparation for data collection

- Selection of the sample
- Finalization of the tools
- Modes of administration of tools

Field Investigators (FIs) - Appointment and Training

- A degree in Education
- Communication skill
- Knowledge of research
- Awareness of the locality
- Interpersonal relationship
- Selection and appointment of FIs.
- Training of FIs - Knowledge and Practical

Administration of tools

- Uniformity in process and time
- Seating arrangement
- Deciding on number of tools to be administered in a session
- Making the respondent comfortable

Monitoring

- Regular intervals and when needed.
- Helps Researcher to understand the pitfalls in the sample, tools, procedure of data collection and selection and training of FIs.
- Helps Researcher to set things right during the process of data collection

Key Informants- Identification

They are the people who provide important and essential information needed for the study, either directly or indirectly.

They are to be selected carefully, the names and information to be kept confidential and to be used for research purpose only.

Difficulties encountered during the field work

- Non availability of quality and quantity of sample as per plan.
- Difficulties during administration of the tools - non cooperation, space, time, background of the sample, preparedness to respond to the tool,etc.

Research Proposal

Prof.M.U.Paily

Research Proposal/Synopsis Format

1. TITLE PAGE
   - Should have the topic of the study, course, university name, name of the researcher and the guide
2. TOPIC OF THE STUDY (to be written just before the introduction on the same page)
3. INTRODUCTION
   - **The conceptual framework** (should give the background of the problem and also link the current problem to be investigated with the existing body of information available)
   - **Statement of the problem** (state the problem clearly and directly. The statement may be a declarative statement or in question form. The problem statement should imply a question about the relationship between specified variables. The major statement may be followed by minor statements)
   - **Brief review of literature** (analytical literature review and argument development to justify your study. The studies can include studies related to the context/background as well as recent studies specifically related to the variables/hypothesis of current study. This should lead to identification of limitations, gaps, and criticism)
   - **Justification of the study/Significance of the Problem** (make clear a why this study is important. This may include1) how this study is going t the gaps identified in the review, 2) how the findings of the study can influence educational theory or practice, 3) presentations of the implicati or possible applications for various stake holders (teachers, educational planners, parents, administrators, and others)
   - **Objectives of the study**
   - **Hypothesis/Research questions** (It is important to state the major and minor research questions that emanate from the literature review. These questions should be translated in to researchable hypothesis. The hypoth should state the expected relationship between the variables in the study good hypothesis has several basic characteristics: 1) it should be reason 2) it should be consistent with known facts or theories, 3) it should be stat in such a way that it can be tested and found to be probably true or proba false, 4) it should be stated in simplest possible terms.)
   - **Operational definition of Variables** (all key terms should be defined. In hypothesis-testing study, these are primarily the terms that describe the variables of the study. It is often helpful to formulate operational definitions a way of clarifying terms or phrases.)
   - **Limitations and Delimitations of the Study** (limitations are those condition beyond the control of the researcher that may place restrictions on the conclusions of the study and their applications to other situations. It is also important to specify the delimitations of your study. Specifying the boundarie of the study is important so that conclusions will not be extended beyond the population sampled)
4. METHODOLOGY
   - **Research Design** (the research design should be described. For quantitative research, the research may be conducted using a variety of approaches, such as experimental, survey, and correlational studies. Basic assumptions and rationale of the selected design must be addressed. Schematic drawing of the design is appropriate for experimental and quasi-experimental designs. For qualitative research description of the design such as ethnography or phenomenology could be done.)
   - **Sample** (The first step in identifying the subjects in a study is to describe the population of interest. Then state the size of the sample and describe the sampling technique that will be used. Also explain the rationale for the method used for the selection of the sample. Variables that are frequently included in describing the sample are chronological age, socioeconomic status, grade level, sex, race, IQ, mental age, academic achievement level and other pertinent attribute of the targeted population.)

- **Tools and Techniques** (if the existing tools are used, the proposal should include reported evidence of it reliability and validity for the purpose of the study. Incase where instruments are to be developed by the researcher, it is necessary to outline the procedure to be followed in developing the same including the establishment of reliability and validity. Also explain the techniques of data collection (observation, interview, diary, etc.)

- **Procedure of Data Collection** (next the procedures to be followed in the study-what will be done, as well as when, where, and how-should be described in detail)

- **Data Analysis Plan** (describe the method of handling and presenting data and outline the statistical procedures to be used

- Time-lines

5. REFERENCES (APA FORMAT) (the reference should be given using the APA format)

Problem Statement D

- Bullying is one of the most critical issues facing middle school education. Beane (2008), found that two in seven children is subjected to bullying behavior and that it affects about ten million middle school children. Bullies who once cornered their victims on the playground are now tormenting them online (Blaire, 2009). E-mail messages and Web sites have increasingly become vehicles to threaten, tease, and humiliate other students.

Statement D

- Yet, to date, there has been little, if any, formal evaluation of online bullying, referred to by many as "cyberbullying". Incidents of online bullying can be just as hurtful as face to face bullying, yet are less likely to be detected or prevented by adults. In order to be able to understand the complexities of online bullying, it is important that a case study be conducted to determine the ill effects of online bullying and examine a case where online bullying was detected and dealt with.

Side note on bullying

- The internet has transformed children's social lives, moving cliques from lunchrooms and lockers to live chats and online bulletin boards and intensifying their reach and power. When conflicts arise today, children use their expertise with interactive technologies to humiliate and bully their peers and avoid reprimand from adults or foes. As parents plead technological ignorance and many schools decline to discipline "off-campus" behavior, the internet has become a free-for-all where bullying and cruelty are rampant.

APPENDIX-1

APPENDIX-2

APPENDIX-3

APPENDIX-4

APPENDIX-5

APPENDIX-6

APPLICATION OF SPSS IN RESEARCH DATA ANALYSIS

By
Dr. Lancy D'Souza
University of Mysore

MEASURMENT

- Nominal
- Ordinal
- Interval
- Ratio

DATA

Nature	Eg.	Statistics
Quantitative	Height, Weight	Parametric
Quantitative	Low/Medium/high	Non-Parametric

STATISTICS

Descriptive
Inferential

AVERAGES OR MEASURES OF LOCATION

1. Mean-X
2. Median- Mdn
3. Mode-Z

The Geometric mean-GM
The Harmonic mean-HM

MEASURES OF DISPERSION

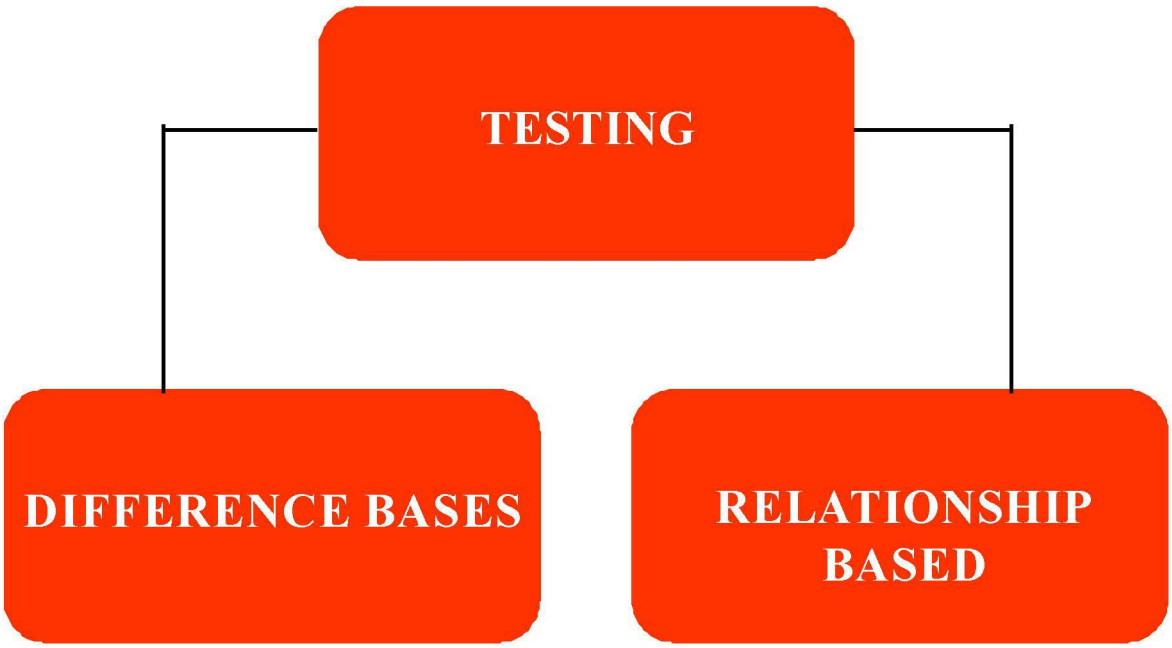
- The Range
- Standard Deviation- S.D
- Average Deviation-A.D
- Quartile Deviation-Q.D or Q
- Variance
- Standard Error

HYPOTHESIS TESTING

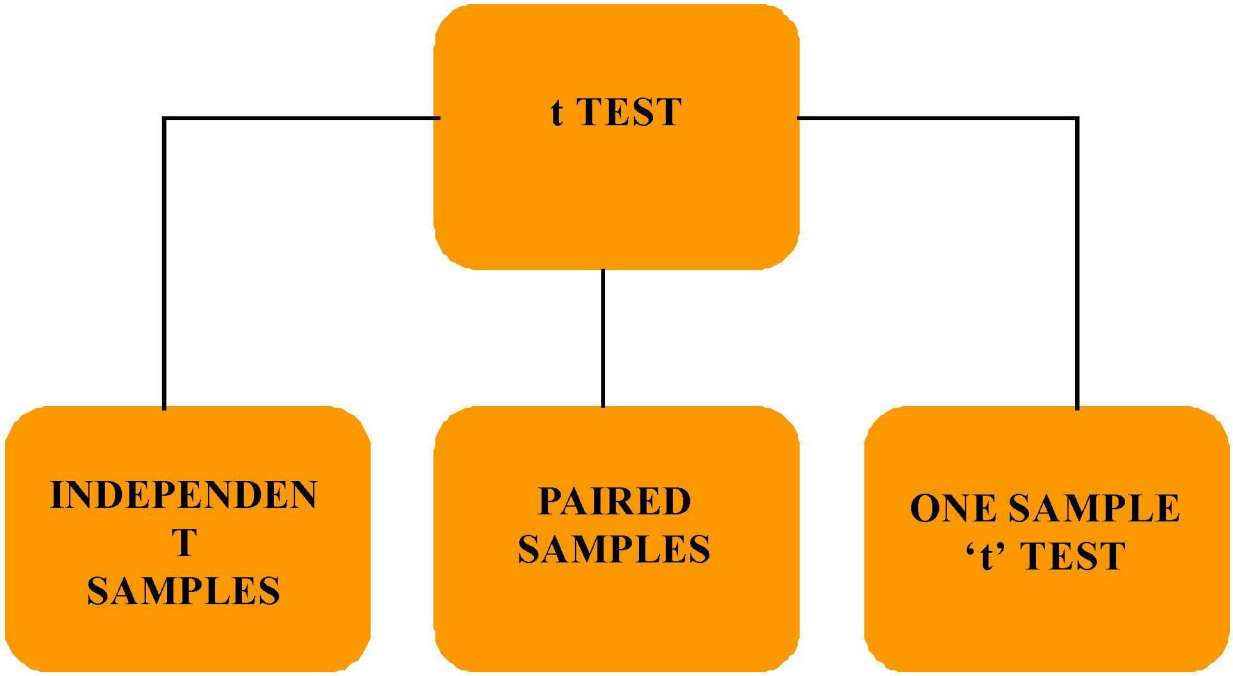
NULL HYPOTHESIS (Ho)

ALTERNATE HYPOTHESIS (H1) /

DIRECTIONAL HYPOTHESIS



DIFFERENCE BASED TESTS
TWO GROUPS



MORE THAN 2 GROUPS

- ANOVA

-ONE WAY

-UNIVARIATE ANOVA

-MULTI VARIATE ANOVA

-REPEATED MEASURE ANOVA

POST HOC TESTS

- LSD
- DUNCAN'S MULTIPLE RANGE TEST
- SCHEFFE'S HSD
- TUKEY'S POST HOC TEST
- BONFERRONI
- DUNNET'S

RELATIONSHIP BASED TESTS

- CORRELATION / PARTIAL
- REGRESSION

REGRESSION

SIMPLE MULTIPLE

Binomial and Multimial Logistic regression

DIFFERENCE BASED TESTS
(NON-PARAMETRIC)

-Chi-square test

-Mann-Whitney U test

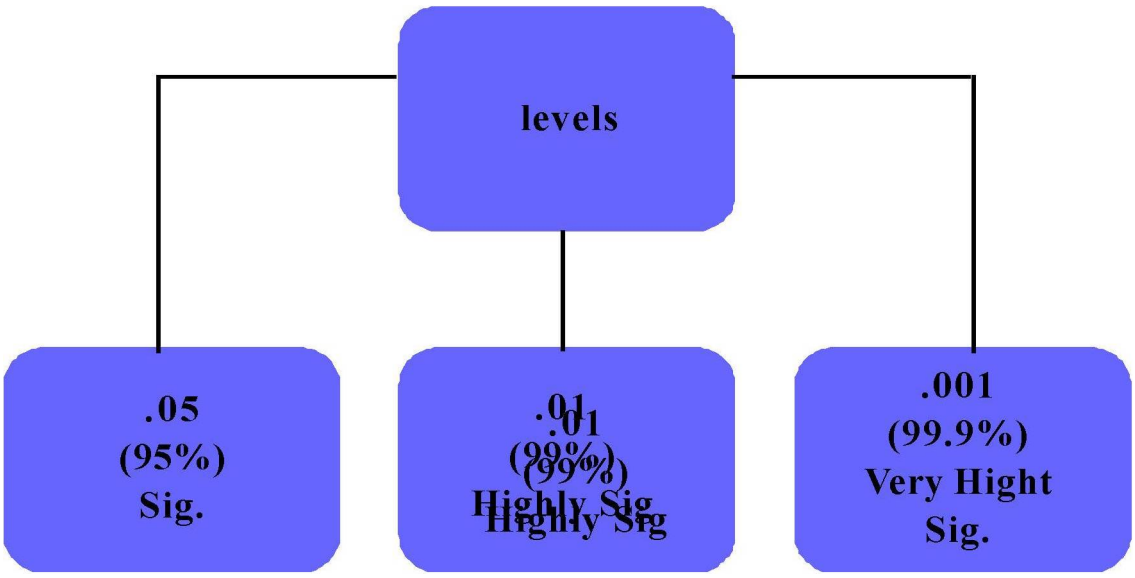
-Wilcoxon Signed rank Test

-Kruskal Wallis One-way ANOVA

RELATIONSHIP BASED TESTS
(NON-PARAMETRIC)

-Spearman's Rank difference correlation
- Contingency co-efficient test

SIGNIFICANT LEVELS



VERIFICATION OF THE HYPOTHESIS

	Result	
Hypothesis	**Significant**	**Non-Significant**
Null	**Reject**	**Accept**
Directional	**Accept**	**Reject**

SPSS

- Statistical package for social sciences
- Statistical Presentation System Software

PASW

Predictive Analysis Software for Windows

HISTORY

- First version released in 1968 after being developed by Norman H. Nie and C. Hadlai Hull.
- SPSS 15.0.1 - November 2006
- SPSS 16.0.2 - April 2008
- SPSS Statistics 17.0.1 - December 2008
- PASW Statistics 17.0.3 - September 2009
- PASW Statistics 18.0 - August 2009
- PASW Statistics 18.0.1 - December 2009
- PASW Statistics 18.0.2 - April 2010
- PASW Statistics 18.0.3 - September 2010
- IBM SPSS Statistics 19.0 - August 2010
- IBM SPSS Statistics 20.0 - August 2011

ADVANTAGES

- Statistics Coach
- Analysis Coach
- Results Coach

Format of SPSS

- Data View
- Variable View
- Output view

THANK YOU

lancy@37.com
lancyd@ymail.com

WRITING THE REPORT

Dr.M.U.Paily

- What you did?
- Why you did?
- How you did?
- What you found?
- How your findings related to the existing body of knowledge?
- what are the implications of the study?
- A research report may presented as:
  1. Thesis
  2. Dissertation
  3. Journal article
  4. Conference paper
  5. Report to the funding agency

WRITING THE REPORT

- Format of a research report
- Style of writing a report
- Headings and subheadings
- Tables and figures
- Use of quotations
- Citing references

STYLE OF WRITING A REPORT

- Careful choice of words to convey exact meaning
- Terms should be clearly defined at the outset
- Colloquial/conversational modes of expressions should not be used
- Personal pronounce such as I, we, you, me, my, our, us should not appear except in quotations
- Should have good readability,-sentences should not be too complex
- Sweeping statements and exaggerated claims should be avoided
- Sound reasoning and intellectual honesty are hallmarks of scholarly style
- Quotations must be accurately cited and suitably acknowledged
- The contributions of other writers must be duly recognized
- It should be written in past tense since the report recounts what has already been done
- Accurate spelling is essential for scholarly writing
- Particular attention should be given to grammar and punctuation
- Abbreviation such as '&' should not be used in a report
- Where there are more than one way to spell a word the writer should aim at consistency

FORMAT OF RESEARCH REPORT

- Universities/funding agencies/publishers have their own preferred format
- Synopsis/executive summary
- Following sections describe the general components

THE GENERAL FORMAT OF THE REPORT

1. The preliminaries

- Title page
- Certificate
- Acknowledgement
- Declaration
- Table of contents
- List of tables
- List of figures
- Abstract

2. The text

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3.4 Procedure of Data Collection
3.5 Scoring and Tabulation of Data
3.6 Data-analysis Plan/Statistical Techniques

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ANALYSIS AND INTERPRETATION OF DATA

4.1 Introduction
4.2 Graphical Representation of Data
4.3 Tests for Normality of Distribution of Score
4.4 Analysis, Interpretation of Results and Discussions

Objective Wise/ Hypothesis Wise

- Data Analysis and Results
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CHAPTER V SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary
5.2 Major Findings
5.3 Conclusions
5.4 Recommendations
5.5 Suggestion for Further Research

3. THE REFERENCE MATERIALS BIBILIOGRAPHY/REFERENCES APPENDICES

Appendix A ICT Questionnaire
Appendix B _____
Appendix C _____

List of Tables
List of Figures

DEVELOPMENT OF CRITICAL THINKING AMONG SECONDARY SCHOOL STUDENTS IN RELATION TO SOME PSYCHO-CONTEXTUAL VARIABLES

Thesis
Submitted to The University of Mysore
For The Degree of Doctor of Philosophy

GUIDE
DR.M.U.PAILY

INVESTIGATOR
RESHMA KLOJI

REGIONAL INSTITUTE OF EDUCATION
Mysore
February - 2018

CERTIFICATE

This is to certify that the thesis entitled "Development of Critical Thinking among Secondary School Students in Relation to some Psycho-contextual Variables" is a record of work carried out by Shri.Reshma Kaloji under my guidance. To the best of my knowledge and belief, the results embodied in this thesis have not been submitted to this or any other University for the award of any Diploma or Degree.

Date: (Dr.M.U.Paily)
Mysore Guide

DECLARATION

I Ms.Reshma Kaloji, do hereby declare that the thesis entitled "Development of Critical Thinking among Secondary School Students in Relation to some Psycho-contextual Variables" is based on the independent research work carried out by me and it has not been submitted in part or full for any diploma or degree of this or any other university

Date:
Mysore (Reshma Kaloji)

ACKNOWLEDGEMENT

GENERAL STATEMENT
GUIDING FACULTY
PRINCIPAL
HEADMASTER, STUDENTS ETC.
LIBRARIAN AND OTHER SUPPORT STAFF
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- SUMMARRY AND FOLLOW-UP

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Appendix A:
Appendix B:

A4 Size Paper, Single Side

HEADINGS AND SUBHEADINGS

1. Chapter heading
2. Centered heading
3. Side heading
4. Paragraph heading

CHAPTER I
INTRODUCTION

1.1 Background of the Study
Information and Communication Technology: world over there is an increased

CHAPTER III
RESEARCH DESIGN

Chapter heading

Methodology

3.1 Sample

3.2 Data Gathering Tools

3.2.1 ICT Questionnaire: The questionnaire……

CHAPTER HEADING

- Every chapter begins a new page
- Chapters are identified by a number and title
- Chapter number in capitals and roman numerals without punctuation
- Centered horizontally two inches from top
- Chapter title in capitals with no punctuation
- Centered one double space below the chapter number
- Three single space below the chapter title is the next heading or the text

CENTERED HEAD

- Used for major chapter divisions
- At least two centered heading in a chapter
- Centered lower case except the initial letter of the key word
- It may be numbered
- Three single spaces separate the centered heading from the text

SIDE EADING

- Indicates chapter subdivisions if used with centered heading
- Indicates chapter divisions if used without centered heading
- Left aligned
- It is normally numbered
- lower case except the initial letter of the key word
- Three single spaces separate it from text above and one double space from text below

PARAGRAPH HEADING

- Indicates divisions with in subdivisions
- It is indented as for normal paragraphs
- It is typed in lower case, ended with a period
- Three single spaces separate it from text above. Spacing below is that used for the rest of the text

NOTE REGARDING HEADING

- All heading should be captions, not sentences
- Each should be brief but informative
- A statement rather than a question

- Spacing
  - The body of the text is normally double spaced. It can also be one and half spaced
  - Different spacing for quotations, tables and figures

- Pagination
  - Every page has a number
  - Not every page has the page number typed on it
  - Preliminaries are numbered using small roman numerals (I, ii, iii)
  - The title page is assigned the number i although this is not typed
  - First page of each chapter will not have the page number typed on it
  - From chapter one onwards Arabic numerals are used
  - Page number can appear top centered/bottom centered/ top right hand corner

TABLES AND FIGURES

- To present specific details or showing inter relationship of a number of parts
- Not to repeat information adequately covered in the text
- TABLE - information presented in tabular form
- FIGURE - illustrative materials such as maps, diagrams, photographs, charts, graphs

PLACEMENT OF TABLES AND FIGURES

- It should always be introduced
- Tables and figures should always follow as closely as its first mention in the text
- If they occupy more than half a page, they should be presented on a new page
- If the material is essential for the conclusions which follow, the table should be presented in the main body of the text
- If the material is only a supporting details then it should come as appendix

NUMBERING OF TABLES AND FIGURES

- All tables should be numbered
- Use Arabic numerals for numbering
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- The word TABLE in capitals and its appropriate number is centered
- It is placed above the table. Double space above the table title
- Table is separated from text- triple space above and below
- In case of figure separate numbering and all other rules are same except that it comes below the figure

TABLE AND FIGURE CAPTIONS

- Every table or figure has a title
- Title should be a concise summary of what is presented
- It should be in caption form and not a complete sentence
- Key words are capitalized
- More than two line - single spaced and centered like an inverted pyramid

FORMAT OF TABLES

1. Table number
2. The caption or title
3. The box heads - the captions identifying vertical columns
4. The stub, the first column in the table, identifying the row entries
5. The field, the columns containing data

- Footnotes * †
- VERY LARGE TABLES AND FIGURES
  - PLACE SIDEWISE ON THE PAGE
  - REDUCE PHOTOGRAPHICALLY
  - MYA BE CONTINUED TO MORE THAN ONE PAGE
  - MAY BE FOLDED

GENERAL CONSIDERATIONS

- Simplify. Keep to the essentials.
- Justify. Make no statement that is not based on facts and data.
- Quantify when you have the data to do so. Avoid 'large', 'small'; instead, say '50%', 'one in three'.
- Be precise and specific in your phrasing of findings.
- Inform, not impress. Avoid exaggeration.
- Use short sentences.
- Use adverbs and adjectives sparingly.
- Be consistent in the use of tenses (past or present tense). Avoid the passive voice, if possible, as it creates vagueness (e.g., 'patients were interviewed' leaves uncertainty as to who interviewed them) and repeated use makes dull reading.
- Aim to be logical and systematic in your presentation.

- **Person and voice**
  - Avoid first person - I, we, me
  - Use third person - investigator, researcher

- **Tense**
  - Generally in past tense
  - Introductory section - use present tense
  - Recommendations - future tense

- **Clarity**
  - Use as few words as possible
  - Use the simplest term as possible
  - Organize it logically

- **Consistency in**
  - Word usage
  - Meanings
  - Special symbols
  - Abbreviation
  - Spacing quotes
  - Etc.

- **Tentative versus definitive statements**
  - Avoid too much certainty and confidence
  - Some sections of your report you can be definitive

EXECUTIVE SUMMARY

- Project Summary
- Background
- Process
- Finding and Conclusions
- Recommendations for Action.

- **Results**

- Presentation of data
- Analysis of data

- **Discussion**

- Interpretation of findings
- Implications/Applications

- **Summary and Conclusions**

4.3.5 Correlation between critical Thinking and Academic Achievement Eliminating Intelligence

The partial correlation coefficients and the correspond Z value for each of the school subject are given in Table 4.3.4.

TABLE 4.3.4
Partial rs and Z Values for the School Subjects

Sujbects	Partial r	Z - Value
Languages	+ . 165	4.76
Social Studies	+ .179	5.16
Mathematics	+.152	4.38
Science	+ .156	4.49
Total (All Subjects)	+.176	5.07

The Z value of 2.58 was required at 1 percent level. The observed Z values of 4.76, 5.16, 4.49 and 5.07 for languages, social studies, Mathematics,, Science and total respectively were greater than the required value of 2.58. Hence, it is clear that all the particl rs were significant at 1 percent level (Table 4.3.4) It showed significatn correlation between critical thinking and academic achievement even after controlling for intelligence. Thus the hypotheses that there is no significant positive correlation between critical thinking and academic achievement (each subjects separately as well as the total) eliminating the effect of intelligence test scores was rejected at 0.01 level. All the r values were positive but low.

These findings are similar to those of pillai and Nayar (1968,) Nayar (1969), Knight (1981), Kehler (1982), Mayes (1986), Ircink (1990), Sidney (1989), Benny (1990), Jordon (1990), Brown (9191), Smith (1996), Coca (1998), Sheeba (1998), who also found significant positive correlation between critical thinking and academic achievement. However, it was found that these findings were not in confirmity with those of samuel (9170), Johnson (1990), Mc Garrity (9190) and Nathan (1997) who found no significant relationship between these variables. An analysis of these studies indicated that in all the studies the effect of intelligence was not eliminated in finding the relationship between critical thinking and academic achievement which was a prime concern of this investigation.

In the above findings critical thinking emerged as a correlate of achievement. Development or improvement of critical thinking abii the students may bring out corresponding improvement in academic achievemtn. The positive correlation between critical thinking and academic achiement in language, social studies, mathematics and science indicated that the students ability to think critically and corresponding improvement in achievement is not restricted to a particular subject. Even though the students critical thinking score is an inndication of his ability to improve academic achievement but does not by itself promote higher level of achievement.

43.6 Rural-Urban Variation in Critical Thinking

The critical thinking test scores of rural and urban students were compared by taking intelligence test scores as covariate, employing analysis of Covariance (ANCOVA). Teh results are given in Table 4.3.5

FINDINGS

- Significant positive correlation between critical thinking and academic achievement (in each subject separately as well as achievement as a whole –i.e all subjects tegether) was found.
- Conclusion
- Academic achievement is positively correlated with critical thinking.

RECOMMENDATION

- The existing concern of lowering academic standards could be taken care to a great extent by developing critical thinking among students. Since the study revealed substantial relationship between critical thinking and achievement in different subject, improvement in the first factor would naturally bring in improvement in the second factor as well. Hence it is necessary that critical thinking ability be consciously cultivated though variety of situations; classroom teaching, in the laboratory work, field study situations, and through literary and cultural activities

4.3.8 Gender Difference in Critical Thinking

The mean critical thinking scores of boys and girls were compared, by taking intelligence test score as covariate, using analysis of covaricance (ANCOVA) and the results are presented in the Table 4.3.10

TABLE 4.3.10

Summary of ANCOVA: Critical Thinking Scores of Boys and Girls

Source of Variation	SS	df	MS	F-Value
Between groups	20.48	1.	29.48	
Within group	11721.85	844	13.89	
N.S. -Not Significatn at 0.05 level				

The F- Value of 2.12 for boys and girls is not significant at 0.05 level with the dr of 1/844 (Table 4.3.10). This indicated that the critical thinking scores of boys and girls do not differ significantly. The boys and girls had the same level of critical thinking. Hence, the hypotheses that there is no significant difference between boys and girls in their mean critical thinking scores eliminating the effect of intelligence test score was retained. Further, the researcher out of his curiosity applied t-test to know whether the mean critical thinking scores of boys and girls differ significantly without controlling for intelligence test score. The result of t-test is given in Table 4.3.11.

TABLE 4.3.11

Significance of Difference between Mean Critical Thinking Scores of Boys and Girls

Gender	N	Mean	S.D	df	t-Value
Boys	426	18.79	3.70	882	2.24*
Girls	458	18.21	3.92		

* Significant at 0.05 level

Table 4.3.11 shows that the mean difference in critical thinking score between boys and girls is significant at 5 percent level ($t = 2.24 > t_{.05} = 1.96$). This revealed that there is a significant difference between boys and girls in their mean critical thinking scores without eliminating the effect of intelligence test score and the difference is in favour of boys. This shows that boys had significantly higher critical thinking than girls. This is due to the fact that the boys included in the study had significantly higher intelligence than the girls (Table 4.3.12) and it is a fact that intelligence and critical thinking are significantly positively correlated. (Hypotheses No. 1 of the study). And it is due to this reason that the ANCOVA result (Table 4.3.10) was not found significant.

TABLE 4.3.12

Significance of Difference between Mean Intelligence Scores of Boys and Girls

Gender	N	Mean	S.D	df	t-value
Boys	431	16.08	4.99	879	4.29*
Girls	450	14.60	5.26		

* Significant at 0.05 level

From the above discussion it is clear that girls and boys do not differ significantly in their ability to think critically. The findings is in agreement with the findings of Handfield (1980), Knight (1981), Kehler (1982), Sidney (1989), Ircink (1990), Benny (1990), Smith (1990), Cargnel (1998), Coca (1998), Sheeba (1998), who also reported no gender difference as far as critical thinking is concerned. However, it was found that the finding of the study is not in conformity with those of Nayar (1969), Brown (1991), Goldberg (1991), Foss (1995), M Murithi (1998), who found a significant gender difference in critical thinking. Nayar (1969) found the gender difference in favour of boys while Brown (1991) and Goldberg (1991) found in favour of girls.

As evident from the studies reported above, the result of the studies conducted (earlier) on gender difference in critical thinking is inconclusive. Some studies had found significant gender difference might be due to the fact that these studies had not eliminated the effect of intelligence and the difference could be due to the difference in intelligence rather than actual difference in critical thinking.

4.3.9 Difference in Critical Thinking between the Students coming from Joint and Nuclear Families

The critical thinking scores of students coming from nuclear and joint families were compared by taking intelligence as a covariate. The data were analysed using analysis of covariance (ANCOVA) and the results are presented in Table 4.3.13

ETHICAL ISSUES IN EDUCATIONAL RESEARCH

PROF.Y.N.SRIDHAR

NATURE OF ETHICS

- Ethics are broadly the set of rules, written and unwritten, that govern our expectations of our own and others' behaviour.

- Effectively, they set out how we expect others to behave, and why. While there is broad agreement on some ethical values there is also wide variation on how exactly these values should be interpreted in practice.

- Research ethics are the set of ethics that govern how scientific and other research is performed at research institutions such as universities, and how it is disseminated.

OBLIGATIONS OF A RESEARCHERS

- **Three sets of obligations of a researchers to adhere to professional standards.**
- 1. An obligation to honor the trust that their
- colleagues place in them.
- 2. An obligation to themselves. Irresponsible conduct in research can make it impossible to achieve a goal.
- 3. An obligation to act in ways that serve the
- public.

SCIENTIFIC KNOWLEDGE

- The object of research is to extend human knowledge beyond what is already known.

- But an individual's knowledge enters the domain of science only after it is presented to others in such a fashion that they can independently judge its validity

THE IMPORTANCE OF RESEARCH ETHICS

- Research ethics are important for a number of reasons.
- They promote the aims of research, such as expanding knowledge.
- They support the values required for collaborative work, such as mutual respect and fairness. This is essential because scientific research depends on collaboration between researchers and groups.
- They mean that researchers can be held accountable for their actions. Many researchers are supported by public money, and regulations on conflicts of interest, misconduct, and research involving humans or animals are necessary to ensure that money is spent appropriately.

RESEARCH MISCONDUCT

- Research misconduct means Fabrication, Falsification, or Plagiarism (FFP) in proposing, performing, or reviewing research, or in reporting research results.
- (a) Fabrication is making up data or results and recording or reporting them.
- (b) Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
- (c) Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.
- (d) Research misconduct does not include honest error or differences of opinion.

PLAGIARISM AND SELF-PLAGIARISM

- **Self-Plagiarism**
- Plagiarism: using the ideas or words of another person without giving appropriate credit (Nat. Acad. Press document)
- Self-Plagiarism: The verbatim copying or reuse of one's own research (IEEE Policy statement)
- **Both types of plagiarism are considered to be unacceptable practice in scientific literature**

DUPLICATION

- China and Japan, have estimated duplication rates that are roughly twice that expected for the number of publications they contribute to Medical research.

- Perhaps the complexity of translation between different scripts, differences in ethics training and cultural norms contribute to elevated duplication rates in these two countries.

OTHER TYPES OF ETHICAL VIOLATIONS

- Duplicate publication/submission of research findings; failure to inform the editor of related papers that the author has under consideration or "in press"

- Unrevealed conflicts of interest that could affect the interpretation of the findings

- Misrepresentation of research findings - use of selective or fraudulent data to support a hypothesis or claim

DATA MANIPULATION

- Researchers who manipulate their data in ways that deceive others are violating both the basic values and widely accepted professional standards of science. - failure to fulfill all three obligations.

- They undermine their own authority and trustworthiness as researchers.

- When a mistake appears in a journal article or book, it should be corrected in a note, erratum (for a production error), or Additions/ Corrections

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Date:
Mysore (Reshma Kaloji)

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  - MAY BE FOLDED

GENERAL CONSIDERATIONS

- Simplify. Keep to the essentials.
- Justify. Make no statement that is not based on facts and data.
- Quantify when you have the data to do so. Avoid 'large', 'small'; instead, say '50%', 'one in three'.
- Be precise and specific in your phrasing of findings.
- Inform, not impress. Avoid exaggeration.
- Use short sentences.
- Use adverbs and adjectives sparingly.
- Be consistent in the use of tenses (past or present tense). Avoid the passive voice, if possible, as it creates vagueness (e.g., 'patients were interviewed' leaves uncertainty as to who interviewed them) and repeated use makes dull reading.
- Aim to be logical and systematic in your presentation.

- **Person and voice**
  - Avoid first person - I, we, me
  - Use third person - investigator, researcher

- **Tense**
  - Generally in past tense
  - Introductory section - use present tense
  - Recommendations - future tense

- **Clarity**
  - Use as few words as possible
  - Use the simplest term as possible
  - Organize it logically

- **Consistency in**
  - Word usage
  - Meanings
  - Special symbols
  - Abbreviation
  - Spacing quotes
  - Etc.

- **Tentative versus definitive statements**
  - Avoid too much certainty and confidence
  - Some sections of your report you can be definitive

EXECUTIVE SUMMARY

- Project Summary
- Background
- Process
- Finding and Conclusions
- Recommendations for Action.

- **Results**

- Presentation of data
- Analysis of data

- **Discussion**

- Interpretation of findings
- Implications/Applications

- **Summary and Conclusions**

4.3.5 Correlation between critical Thinking and Academic Achievement Eliminating Intelligence

The partial correlation coefficients and the correspond Z value for each of the school subject are given in Table 4.3.4.

Some Basic Questions

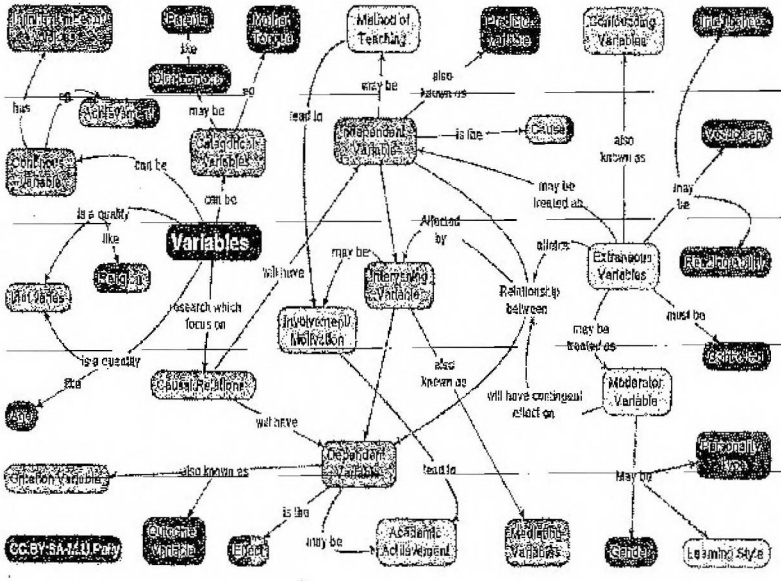
- 1. What is the overriding problem (in one sentence)?
- 2. What is the population and sample that are affected by this problem?
- 3. What type of study will this be?
- 4. Will this study be qualitative or quantitative?
- 5. What type of methodology will be used?
- 6. What type of data will be collected?
- 7. What possible outcomes are expected?

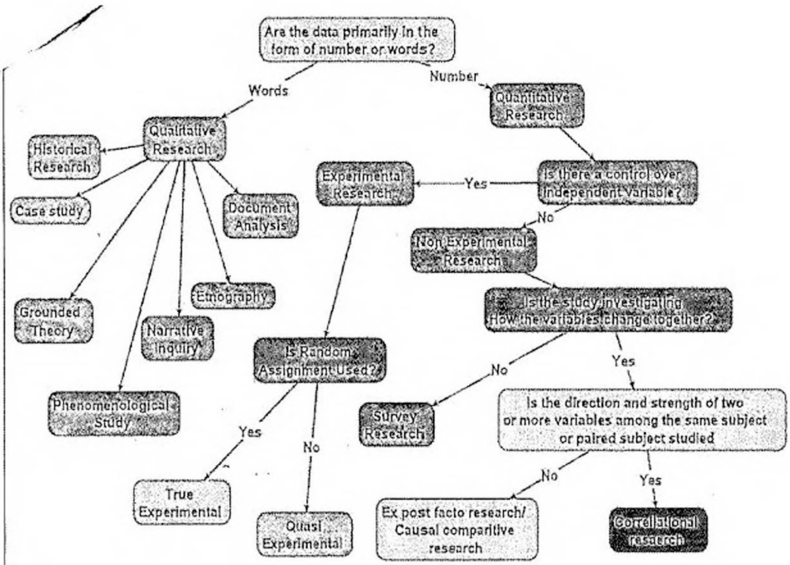
Your Problem Statement

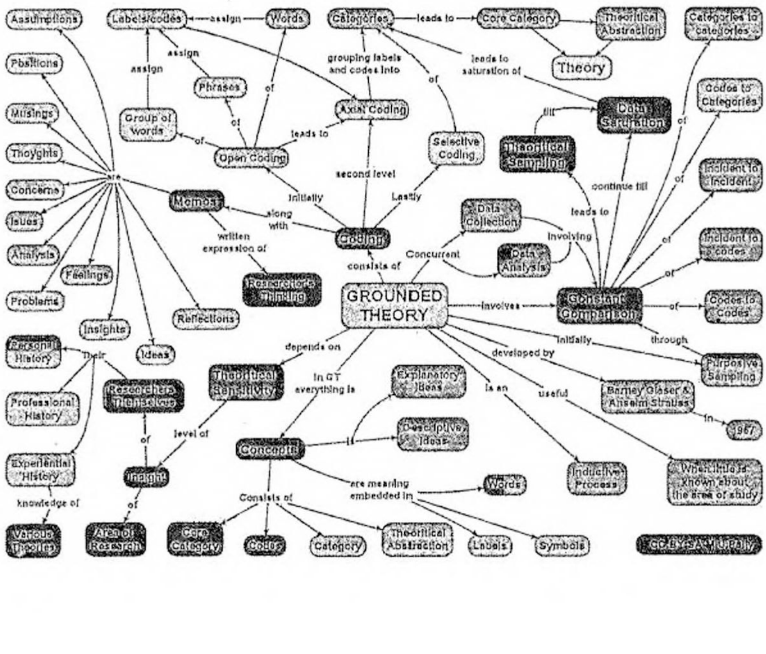
- What is the overriding problem?
  - Retention; inability to adapt to change; poor working conditions; inequities; poor conditions in health or economics, deficits; lack of evaluation of a program; conflict in: ethics, values, morals...
- Where is the problem found?
  - Manufacturing; education; health administration; government; society; corporate America...
- What needs to be done to solve the problem?
  - Survey; interview; create a new model; determine what experts believe; evaluate; meta-analyze, conduct an experiment; benchmark...

The Heart of a Dissertation

- The heart of a doctoral dissertation IS the PROBLEM STATEMENT. This is the place where most committee members go first to understand and assess the merits of a proposal or a dissertation.
- After reading the problem statement, the reader will know *why* you are doing this study and be convinced of its importance.
- The reader will NOT be left with an unanswered: "So What?" question at the studies conclusion.

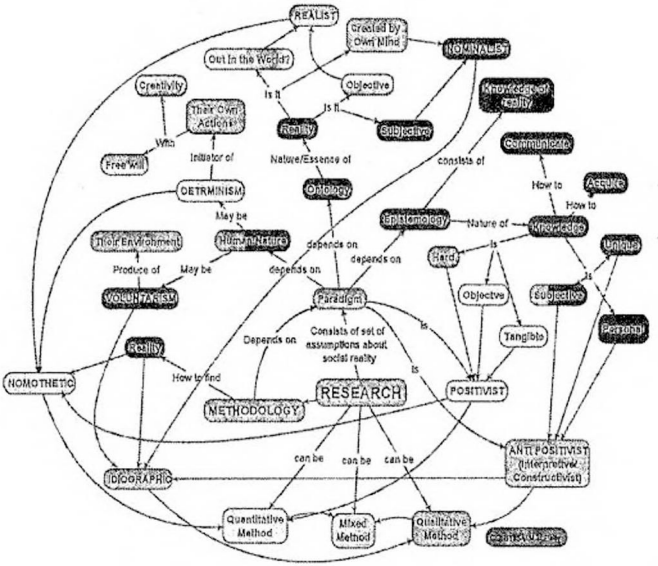



Are the data primarily in the form of number or words?
Words
Number
Qualitative Research
Quantitative Research
Historical Research
Case study
Document Analysis
Grounded Theory
Narrative inquiry
Etnography
Phenomenological Study
Experimental Research
Yes
Is there a control over independent Variable?
No
Non Experimental Research
Is the study investigating How the variables change together?
Is Random Assignment Used?
Yes
No
True Experimental
Quasi Experimental
No
Survey Research
Yes
Is the direction and strength of two or more variables among the same subject or paired subject studied
No
Yes
Ex post facto research/ Causal comparitive research
Correlational research


GROUNDED THEORY
Assumptions
Positions
Musings
Thoyghts
Concerns
Issues
Analysis
Feelings
Problems
Insights
Ideas
Reflections
are
Labels/codes
assign
Words
Phrases
Group of Words
Open Coding
leads to
Axial Coding
grouping labels and codes into
Categories
leads to
Core Category
Theoritical Abstraction
Theory
leads to saturation of
Selective Coding
second level
Lastly
initially
Memos
along with
Coding
written expression of
Researcher's Thinking
consists of
Concurrent
Data Collection
Data Analysis
involving
Theoritical Sampling
fill
Data Saturation
continue till
leads to
involves
Constant Comparison
Categories to categories
Codes to Categories
Incident to Incident
Incident to codes
Codes to Codes
through
Purposive Sampling
initially
developed by
Barney Glaser & Anselm Strauss
in
1967
useful
When little is known about the area of study
is an
Inductive Process
depends on
Theoritical Sensitivity
In GT everything is
Explanatory Ideas
Descriptive Ideas
Concepts
are meaning embedded in
Words
Consists of
Core Category
Codes
Category
Theoritical Abstraction
Labels
Symbols
Personal History
Professional History
Experiential History
Their
Researchers Themselves
of
Insight
level of
knowledge of
Various Theories
Area of Research

Qualitative Research Proposal

1. Introduction
   a. Purpose of the study
   b. Situating the self
   c. Initial guiding questions
   d. Review of relevant literature/discourse
2. Research procedure
   a. Site and selection of the sample
   b. Description of the setting
   c. Role of the researcher
   d. Data collection methods
   e. Ethical issues
3. Data analysis/presentation
   a. Data analysis strategies
   b. Validity and dependability issues
4. Importance/significance of the study
5. Time schedule and budget
6. References
7. Appendices



Appendix-1

List of participants

1. Mr D Natarajan, Lecturer, DIET, Vadalur, Cuddalore District, Tamil Nadu
2. Mr K Ramesh Kumar, Lecturer, DIET-Uthamasolapuram, Salem Dt,

   Tamil Nadu-636 010
3. Mr A Javeed, Lecturer, DIET - Oddanchatram, Dindiguldistrit, Tamil Nadu
4. Mr A Sivakumar, Lecturer, DIET, Ranipet, Vellore District, Tamil Nadu
5. Ms Nisha N, Lecturer, DIET, Krishnagiri , Tamil Nadu
6. Ms V Hemalatha, Deputy Director, SCERT, Chennai-6
7. Ms M Lawrencia Mary, Lecturer, DIET, Lawspet, Puducherry-605 008
8. J S Chithra, Lecturer, DIET, Lawspet, Puducherry-605008
9. Mr Mohammed Abdul Munaf, Senior Lecturer, Govt College of Teacher Education

   Mettugadda, Mahbubnagar -509001 Telangana State
10. Mr KKV Rayalu, Lecturer, Govt. IASE, Masab Tank, Near NMDC, Hyderabad, Telangana State
11. Mr KandipalliRamakrishnarao, Lecturer, Govt. DIET Vomavavalli, Gara (Mandal) Vomaravalli-532406 ,Srikakulam Dist, Andhra Pradesh
12. Mr Payila Dharma Rao, Lecturer, DIET, Bheemunipatnam, Visakhapatnam (Dist), Andhra Pradesh
13. Mrs G RajanikanthaKumari, Co-ordinator ELT, SCERT-AP, Anjaneya Towers, 2nd Block & 2nd floor, Ibrahimpatnam - Krishna District, Andhra Pradesh - 521456
14. Mr G Kotresh, Lecturer, Govt Teachers College of Education, Chitradurga, Karnataka
15. Ms Nishath Salma H S, Lecturer, DIET, Chikkaballapura, Karnataka
16. Mr Nagaraja C, Senior Lecturer, DIET, Bidar, Karnataka
17. Mr R Ravi, Lecturer, DIET, MC Road, Mandya-571 401, Karnataka
18. Mr Rajesh BabuReddipalli, Research Scholar, RIEM
19. Mr Milan L, Research Scholar, RIEM

20. Mr Umesha G, Research Scholar, RIEM
21. Sister Laura, Research Scholar, RIEM
22. Mr Bhargav, Research Scholar, RIEM
23. Ms Jyothi Trivedi Adhoc Faculty RIEM
24. Mr Noufal P Adhoc Faculty, RIEM
25. Mr Ambady K G Adhoc Faculty RIEM
26. Mr Uday RAdhoc Faculty RIEM

APPENDIX-2

APPENDIX-2

Regional Institute of Education, Mysuru- 570 006
Educational Research methodology { Course-end exam paper}
Time: 1.30 Hrs **Max Marks: 100**

Name:

Designation:

Instruction:- The following are the MCQ on Educational Research. It is an attempt to test your accomplishment of knowledge related to research activity during this course. Encircle the appropriate choice of each item.

1. Research is-

a)Searching again and again

b) finding solution to any problem

c) working in a scientific way to search for truth of any problem

d) None of the above

2. Manipulation is always a part of-

a) Historical research b) Fundamental Research

c) Experimental Research d) Descriptive Research

3. Observation done in a pre- planned manner is

a)Informal observation b) Formal observation

c) Systematic observation d) Direct observation

4. The study of cause and effect of behaviour of an individual is known as

a)observation b) survey c) experimentation d) case study

5. Given the series below:

X	18	19	20	21	22	23	24	25
F	5	6	7	8	9	8	9	5

The mode is :-

a)20 b) 23 c) 22 d) 21

6. The sum of the derivations of the items from mean is always

a)1 b) Zero c) 2 d) 6

7. Reliability of test could be increased by

a) having many difficult items

b) reducing the duration of the test

c) including many easy questions

d) having large number of test items

8. Skewness is present if

a) Quartile are not equidistant from median

b) Median is equal to 3rd quartile

c) If quartile are equidistant from median

d) None of the above

9. The process of grouping of related facts into classes is called.

a) Tabulation. b) Classification c) Pie diagram d) None of the above

10. A criterion reference test, interpretation is made based on

a)comparing a student's score with other group members

b)comparing a student's score with his /her previous test scores

c)average performance of the group

d)a pre-fixed standard of performance

11. When the sample is selected from different age levels to study specific aspects of development, that study is called

a)Longitudinal b) Cross- sectional c) Experimental d) Survey

12. One of the techniques of evaluation is

a)Check list b) Observation c) Rating scale d)Questionnaire

13. A teacher has to locate the underlying difficulties for errors in learning the content. Which of the following tests should the teacher use ?

a)Achievement test b) Intelligence test

c) Interest test d) Diagnostic test

14. A set of vertical bars whose areas are proportional to the frequencies represented is called

a) Frequency polygon b) Histogram.

c) Pie chart d) None of the above

15. Group relationship in the classroom can be analysed through the technique of

a)Observation b) Sociometry

c) Experimentation d) Interview

16. Evaluation used to identify the learning difficulties of students in the classroom is known as

a) Formative Evaluation b) Summative Evaluation

c) Diagnostic Evaluation d) prognostic Evaluation

17. Direct personal interviews constitute

a) primary data b) Secondary data

c) Tertiary data d) none of the above.

18. 'TAT' is an example for the following test

a)Aptitude b) Intelligence c) Projective d) Interest

19. The main purpose of giving a test to the students is to

a)Prepare a report for the parents

b)Maintain the test records

c)Test the performance of the students

d)Bring suitable modification in teaching

20. An ability test administered to the same set of students after a time gap of one month yields the same score. Which of the characteristic does the test posses?

a) Reliability b) Validity

c) Practicability d) Administrability

21. In conducting an experimental study experimental group is deliberately exposed to

a) Independent variable b) Dependent variable

c)Intervening variable d)Controlled variable

22. In order to provide effective educational guidance to students the teacher should maintain and utilize

a)cumulative record b) educational record

c) Interest record d) anecdotal record

23. Middle quartile is known as

a)Harmonic mean b) Mode c) Median d) Geometric mean

24. A hypothesis is a -

a) Law b) canon c) Postulate d) supposition

25. Nine years old children are taller than 7 years old ones. It is an example of

a) vertical studies b) cross-sectional studies

c) experimental studies d) case studies

26. Controlled group condition is applied in -

a)Survey research b) Historical Research

c) Experimental Research d) Descriptive Research

27. Which of the following is a Research tool?

a) Graph b) Illustration c) questionnaire d) Diagram

28. If both the variables are varying in the same direction it is called

a) Positive correlation b) multiple correlation.

c) Negative correlation d) No relationship

29. Which of the following variable cannot be expressed in the quantitative terms?

a) Socio-economic Status b) Marital Status

c) Numerical Aptitude d) Professional Attitude

30. Action research means-

a) Longitudinal research b) An applied research

c) A research initiated to solve an immediate problem

d) A research with socio-economic objective

31. Normal probability Curve should be-

a) Positively skewed b) Negatively skewed

c) Leptokurtic skewed d) Zero skewed

32. The process most needed in experimental research is-

a) Observation b) Manipulation

c) Controlling d) Content analysis

33. To be critical, thinking must be-

a) Practical b) Socially relevant

c) Individually satisfying d) Analytical

34. Which of the following sources of data is not based on primary data collection?

a) Census of India b) National sample survey

c) Statistical abstract of India d) National family health survey

35. Action research hypothesis is-

a) General in nature b) Similar link in pure sciences

c) Written in two parts- one is goal part second is action part

d) A hypothesis in real sense

36. The law of probability is applied in

a) Random sampling b) Non- random sampling

c) Geometry d) None of the above

37. Studying the social status of a population a researcher concluded that Mr. X is socially backward. His conclusion is

a) Wrong b) Biased c) Inaccurate d) Right

38. Data collected from published books are called

a)Primary data b) Secondary data

c) Tertiary data d) None of the above

39. Type-I Error occurs if _____

a) the null hypothesis is rejected even though it is true

b) the null hypothesis is accepted even though it is false

c) both the null hypothesis as well as alternative hypothesis are rejected

d) None of the above

40. Seeing a very big rally it was reported that X party will win the election, the conclusion was basedon

a) Random sampling b) Cluster sampling

c) Purposing sampling d) Systematic sampling

41. For doing external criticism (for establishing the authenticity of data) a researcher must verify

a) The paper and ink used in that period which is under study

b) The signature and handwriting of the author

c) style of prose writing of that period

d) All of the above

42. Where informants are literate and are spread over a vast area, the most suitable method of collecting data is

a) direct persona interview b) Mailed questionnaire method

c) Interview by investigator d) Any of these

43. Direct personal interviews constitute

a) primary data b) Secondary data

c) Tertiary data d) None of the above.

44. The main purpose of research in education is to _____

a) Increase social status of an individual

b) Increase job prospects of an individual

c) Help in the personal growth of an individual

d) Help the candidate become an eminent educationist

45. Evaluation research is concerned with _____

a) Why are we doing? b) What are we doing?

c)How well are we doing? d)None of the above

46. One of the following is not a quality of researcher:

a) Keenness in enquiry b) He must be of alert mind

c) His assertion to outstrip the evidence

d) Unison with that of which he is in search

47. The data of research is _____

a)Qualitative only b) Quantitative only

c)Both (a) and (b) d)Neither (a) nor (b)

48 . Survey research studies _____

a) Events b) Processes c)Populations d)Circumstances

49. Books and records are the primary sources of data in:

a) clinical research b)historical research

c)laboratory research d)participatory research

50. The depth of any research can be judged by:

a) title of the research b) duration of the research

c) objectives of the research d) total expenditure on the research

Your suggestion for further improvement in the course, in brief.

APPENDIX-3

Appendix-3 Time table of Phase-I

Day and Date	Session -I 9.30 to 11 am	Session- II 11.15 to 12.45 pm	Session – III 2 to 3.30 pm	Session- IV 3.45 to 5.15 pm
Day-1/ 11-12-2017	Registration and Inaugural	Sharing state's experiences (AP, Kar, TN, Te, Ke, Pu, Lk)	Educational Research- Approaches- Historical VC	Educational Research- Meaning, nature, types MPR
Day-2/ 12-12-2017	Educational Research- Approaches- Descriptive, TVS	Educational Research- Approaches- Descriptive, case study, survey TVS	Educational Research- Approaches- Experimental, AKVD	Review of related literatures- its and importance VR
Day-3/ 13-12-2017	Identification of research problem- sources/ Areas CSN	Formulating and stating research problem CSN	Managing data collection AKVD /Group work Reviewing and formulating research problem	
Day-4/ 14-12-2017	Types of variables in a research SR	Writing of objectives, research question and hypothesis SR	Normal distribution and NPC TVS Group work	
Day-5/ 15-12-2017	Sampling Techniques TVS	Preparing Research proposal MUP	Group work Analysing research work- Thesis/ dissertation Preparing research proposal	
Day-6/ 16-12-2017	Presentations by participants	Research designs BP	Tools and techniques for Qualitative research- Observation schedule, SBH	
Day-7/ 17-12-2017	Library work			
Day-8/ 18-12-2017	Standardisation of Tools KAK		Group work Analysing the sampling procedure in thesis/dissertation	Group work Presentations
Day-9/ 19-12-2017	E-resources for educational research S Nagaraj		Group work Browsing and collecting reviews for research	Group work Tools construction
Day-10/ 20-12-2017	Group work/ Individual work- Preparing research proposal		Group/ Individual work Presentation of research proposal	
Day-11/ 21-12-2017	Question-answer session	Question-answer session	Post-test	Reflections of the participants

APPENDIX-4

Appendix-4 Time Table of Phase-II
"Educational Research Methodology" (11+ 10 days course work)
Phase-2 1-10 Feb 2018

Day and Date	Session -I 9.30 to 11.15 am	Session- II 11.30 to 1 pm	Session – III 2 to 3.30 pm	Session- IV 3.45 to 5.15 pm
Day-1/ 1-2-2018 Thursday	Registration and sharing research experiences (Individual)	Sharing state's experiences	Descriptive Analysis- Graphical Representations TVS	Group work- Drawing various graphs for the data TVS
Day-2/ 2-2-2018 Friday	Descriptive Analysis- Measures of Central tendancy TVS	Descriptive Analysis- Measures of variability TVS	Group work- Computing measures of central tendency and variability	Descriptive Analysis- Measures of correlations TVS
Day-3/ 3-2-2018 Saturday	Descriptive Analysis- Measures of percentiles TVS	Group work- Computing percentiles for the data	Analysis of data using SPSS Dr LancyD'souza	
Day-4/ 4-2-2018 Sunday	SPSS Dr LancyD,souza		Library work	
Day-5/ 5-2-2018 Monday	Correlation techniques TVS		E- resources for educational research analysis S Nagaraja	
Day-6/ 6-2-2018 Tuesday	Significance of F-test ANOVA TVS	Qualitative Research- Prof V D Bhat	Significance of chi-square test TVS	Group work - computation of Chi-square for the data
Day-7/ 7-2-2018 Wednesday	Research Report writing MUP	Group work- Reviewing research reports followed by discussion	APA style for citation and referencing Prof CGVM	
Day-8/ 8-2-2018 Thursday	Individual work- Analysing the research data	Ethical Issues in Research YNS	Preparation of Research Report- Individual work	
Day-9/ 9-2-2018 Friday	Research Report Presentations- Individual work		Course-end exam	
Day-10/ 10-2-2018 Saturday	Reflections on research activities		Valedictory & Distribution of certificates	

APPENDIX-5

Appendix-5

List of Resource persons

Internal Resource persons

Prof S Ramma, Dean (Instruction)

Prof C G Venkateshamurthy, Dean (Research)

Prof Manjula P Rao Head, Department of Education

Prof M U Paily

Prof V Ramdas

Prof K Anil Kumar

Dr Sujata B H Assistant Professor

Dr V Chandranna Assistant professor

Dr T V Somashekar Assistant Professor and Programme Coordinator

External Resource persons

Prof C S Nagaraju

Prof B Phalachandra

Prof V D Bhat

Prof Asha KVDKamath

Prof Y N Sridhar (UOM)

Dr LancyD'souza Associate Professor, Department of Psychology, Maharaja College, UOM, Mysuru

APPENDIX-6

Appendix-6

List of Research Problems proposed by participants

"Effectiveness on reading comprehension among viii standard students through peer teaching technique"***A Javeed***

"A Study of Attitude of Teacher Training towards Teaching Profession" ***D Natarajan***

"Teachers' perceptions towards English language as medium of instruction in Salem district, Tamilnadu" ***K Ramesh Kumar***

"A study on attitude of middle school head masters towards zero waste management"

A Shivakumar

"Relative Effectiveness of Multimedia package, constructivitst approach and Traditional Method in Achievement in Chemistry of high school students" ***N Nisha***

Enrichment Activities in English at primary Level***Nishatsalma H S***

A study on the role of parents, teachers and tradition in initiative for the school children among D.El.Edstudents. ***Lawrencia Mary***

A study on the influence of socio economic status and interest on the academic achievement of D.El.Edin Puducherry ***J S Chitra***

A Study on Attitude of High School Teachers Towards Smart Virtual Classin DharmapuriDistrict ,TamiNadu. ***V Hemalatha***

"A study on the relationship between attitude and using ict-troer in teaching practices by mathematics teachers" ***K K V RAYALU***

"A Study of Role of SDMC in School Development" ***GKotresh***

विद्यया ऽमृतमश्नुते

एन सी ई आर टी
NCERT

REGIONAL INSTITUTE OF EDUCATION MYSORE

Educational Research Methodology Course I-Phase

From 11th To 21st December 2017