



## Reflection on Quality of Researches in India

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### ABSTRACT

Research in education is being conducted in central universities, state universities, deemed-to-be universities, private universities, and institutes of India. The Indian education system has not utilized the findings of research in education for improving the teaching-learning process, evaluation procedures, the development of instructional material, curricular as well as co-curricular activities, etc. One of the reasons for not utilizing findings is the quality of research in education. In this paper an attempt was made to peep deep into the quality of research in education conducted at the doctoral level and available on Shodhganga. The criteria used for studying the quality of research in education were wording of title, objectives and hypothesis, sampling techniques, tools, experimental design (only for experimental research), data analysis, and findings. Data were collected from theses of 178 universities in India available on Shodhganga. Each thesis uploaded on Shodhganga was analyzed in respect of the wording of the title of research, the wording of objectives & hypotheses, sampling techniques, tools, experimental design, data analysis, and findings. On the basis of content analysis, it was found that, on the whole, research in education is too weak from all points of view. Thus, there is an urgent need to think of a strategy to be used for improving the quality of research in education..

## 1. Introduction

Development of any country depends to a large extent on quality of research being undertaken in different fields. Quality of research depends on trained man power, infrastructure, and resources. To improve the quality of research in different fields, University Grants Commission introduced revised guidelines based on the Ph.D. regulation, 2009. As per regulation it was compulsory to undergo a course of six months duration. The researcher has to take up four papers, namely, Research Methodology, Use of Computers & other equipments, Research Training and one paper in the concerned area of research. By introducing the pre-Ph.D. course, University Grants Commission emphasized the desire to improve quality of research in different fields. Quality of research is not possible without understanding concepts of research. The first author of this paper has given about 1780 webinar lectures of one and half hours to three hours duration. Also, first author has conducted 200 workshops each of seven to fifteen days duration on Research

Methodology and Applied Statistics all over India. Further Researches uploaded on Shodhganga have been reviewed of 178 Universities of India. Universities include Central Universities, State Universities, Deemed-to-be University, Private Universities & Institutes. This experience made the authors to write reflections on quality of researches in India.

## 2. Identification of Problem

In all subjects the first step of research is Identification of Problem. Many researchers and teachers say that Selection of Problem is the first step. It indicates that people do not know the difference between Identification and Selection. In fact, Identification word is to be used when the situation is heterogeneous while Selection is to be used when the situation becomes homogeneous or relatively homogeneous. Thus Selection is the part of Identification.

In the first step, Problem is another word. Under this step, each researcher has to select a Problem or Variable. There must be minimum one Variable

without which research is not possible. It is observed that majority of researchers as well as teachers do not understand variable. To test it, try to answer the following question related to variable(s).

Which of the following is/are variable(s)?

1. Content of Research Methodology
2. Male Teachers
3. Urban Teachers
4. Hemoglobin
5. Female Science Teachers
6. Anxiety
7. Discussion Method
8. Achievement in Physics
9. Government School
10. Teaching Experience
11. Types of Universities
12. 76% marks in English
13. Science Teacher
14. Reasoning
15. Red Colour
16. Power of Lens
17. Speed of Teaching
18. Types of Mango
19. Job Satisfaction
20. Long answer type Item / Question

Write your answer on a piece of paper and compare it with the correct answer, namely, 1, 4, 6, 8, 10, 11, 14, 16, 17, 18, & 19. It can test your understanding of Variables. The author of this paper has tested it in number of Online as well as face to face workshop and found that not a single participant could answer it correctly. It reflects poor understanding of Variable by researchers and teachers.

### 3. Types of Variable

There is misconception about types of variable. Most of the participants say that Independent and Dependent are the two type of variables in all types of researches. Researchers do not understand that Independent and Dependent variables cannot be in Philosophical Research, Historical Research, Descriptive Survey Research, and Case Study Research. Independent and Dependent variables are only in Experimental Research and Action Research. In large number of theses, Gender, Locale, Types of School, Subjects, Role efficacy, Teacher's Attitude, Organizational Climate, Social Behaviour, Emotional Maturity, Work Motivation, Administrative Behaviour etc. have been

mentioned as independent variable which is wrong. The dependent variables mentioned in researches other than Experimental Research are Job Satisfaction, Student-Teacher relationship, Total Quality Management, etc. So researches are weak on this point too.

Also at the time of analyzing quantitative data researchers need to know which variable is continuous and which is discontinuous / discrete variable. In experimental research, independent variable is always discontinuous / discrete and dependent variable is continuous. Without this understanding, researchers face problem in deciding the statistical technique to be used in analyzing the data.

#### 3.1. Title Writing

The quality of research is judged by the wording of title of research. The titles are of books, research papers / articles and researches. These titles differ among themselves. One can recognize them from the title. The Book title can range from one word to about five words mostly. Length-wise book title is small but it contains lots of information. Research paper / article and research titles are longer than book title. Research title must give information about variable(s), population, method of research and type of data. Each researcher has to write title irrespective of the subject but majority of Institutions and Universities do not teach title writing. Look at the following titles:

1. Singhraj: To study the teachers understanding & their relation with pedagogical practice in school, Ph.D. (Education), Himalayan Garhwal University, 2022.
2. Shah Pallaviben A.: To construct and standardize achievement test in science for STD VIII of Gujarati medium high school of Gujarat, Ph.D. (Education), Gujarat University, 1990.
3. Shah Murugvati S. : To develop auto instructional programme in algebra for STD VIII and to find out their effectiveness in relation to different variables, Ph.D. (Education), Gujarat University, 1968.
4. Shaheen Perveen : To study the relationship between socio-economic status and attitude of high school students towards education in Aurangabad District, Ph.D. (Education), Dr. Babasaheb Ambedkar Marathwada University, 2007.
5. Khan, Taskeen Qudsiya : To investigate the academic anxiety in students of IX standard belonging to Urdu and English medium schools of Aurangabad city, Ph.D. (Education), Dr. Babasaheb Ambedkar Marathwada University, 2011.

6. Khan, Zeenat Muzaffar : To investigate into the effectiveness of microteaching as a techniques on general teaching competence GTS on pupils teachers, Ph.D. (Education), Dr. Babasaheb Ambedkar Marathwada University, 2007.
7. Shaikh, Tahemina Naaz: To study effectiveness of teachers teaching at primary level in English medium schools of Aurangabad District, Ph.D. (Education), Dr. Babasaheb Ambedkar Marathwada University, 2006.
8. Bajpai, Amita: To study aggressive behaviour of adolescents with special reference to the impact of media school environment socio-economic status and home environment, Ph.D. (Education), Chhatrapati Sahuji Mahraj University, 2009.
9. Tanuja Agrawal: To study the impact of Early Child Care Education ECCE Anganwadis on overall school Environment in Indore Division of M.P. State, Ph.D. (Education), Shri Jagdishprasad Jhabarmal Tibarewala University, 2016.
10. Paramjeet Kaur: To study the educational emotional and social problems faced by children of working mothers, Ph.D. (Education), Shri Jagdishprasad Jhabarmal Tibarewala University, 2016.
11. Aibara Hutoxi Daraius: To study the impact of Information and Communication Technology ICT as a subject in Std. X tenth student of Maharashtra State Board SSC Schools in Mumbai, Ph.D. (Education), Shri Jagdishprasad Jhabarmal Tibarewala University, 2018.
12. Roopa Shetty: To study the relationship between Performance appraisal of school teachers and their professional development, Ph.D. (Education), Shri Jagdishprasad Jhabarmal Tibarewala University, 2018.
13. Joshi Vibha: To study the effectiveness of school television programmes in science at secondary school level, Ph.D. (Education), Department of Education (CASE), M.S. University of Baroda, 1987.
14. Parkesh Ashapura P.: To develop a programme for teaching hard points of English at standard IX and to measure its effectiveness, Ph.D. (Education), Department of Education, Maharaja Krishna Kumar Singhji Bhavnagar University, 2014.
15. Singh, J.D: To develop computer assisted instruction on the topic introduction to computer and peripherals and M.S. Word in the subject of computer literacy and used at the bachelor of education level and to study its effectiveness – an experiment, Ph.D. (Education), Department of Education, Maharaja Ganga Singh University, 2015.

Research title cannot start with “To” because “To” indicates direction. For direction, it has to be pin-pointed. Title is never pin-pointed but objectives of

research are pin-pointed, so objectives start with the word “To”. Also population information is not given in titles mentioned at serial numbers 1, 3, 1, 8, 10, 12 and 13. No variable has been mentioned in titles mentioned at serial numbers 7, 11, 13, 14 & 15. Thus from point of wording of title, the quality of research is too low. In fact doctorate degree should not have been awarded. It also reflects that all experts involved in the process of registration and approval the thesis do not know research.

Also look at the following titles of research:

16. Chand, Ratish: Effectiveness of responsive classroom approach of upper primary school students, Ph.D. (Education), Gujarat University, 2021.
17. Sudha, T.: A study of the leadership effectiveness in secondary schools of Delhi, Ph.D. (Education), Department of Education, Jamia Millia Islamia University, 1997.
18. Chugh, Binney: Effectiveness of Advance Organizer Model and Biological science enquiry model in teaching biology, Ph.D. (Education), Department of Education, Jamia Millia Islamia University, 1993.
19. Smita, Tanwar: Effectiveness of blended learning in comparison to traditional teaching – A comparative study, Ph.D. (Education), Jain Vishwa Bharati University, 2022.
20. Mewara Kavita: An effectiveness teaching English Grammar traditional method & ICT programme, Ph.D. (Education), Institute of Advanced studies in Education (IASE), 2018.
21. Kumar Anup: A study of effectiveness of leadership style & its effect on growth of school, Ph.D. (Education), Institute of Advanced studies in Education (IASE), 2019.
22. Singh, Naremdra: A study of effectiveness of Hindi Language training in students of senior secondary level, Ph.D. (Education), Institute of Advanced studies in Education (IASE), 2018.
23. Pal, Sanjay: A comparative study of effectiveness of usages of ICT in science & Arts streams at senior secondary level, Ph.D. (Education), Institute of Advanced studies in Education (IASE), 2018.
24. Douglas, Ashley Kenneth: A study of the effectiveness of educational radio programme at primary level in Anuppur Distract of Madhya Pradesh, Ph.D. (Education), Indira Gandhi National Tribal University, Amarkantak, 2023.
25. Douglas, Ashley Kenneth: Effectiveness of Instructional Package to enhance B.Ed. student teacher pedagogical competency to teach children with special needs, Ph.D.

- (Education), Indira Gandhi National Tribal University, Amarkantak, 2023.
26. Purohit Lalitkumar J.: Effectiveness of Computer aided learning material on achievement in mathematics for students of grade seven, Ph.D. (Education), Indian Institute of Teacher Education, 2021.
  27. Sharma Manju Lata: A study of impact of teaching aptitude and effectiveness of teachers on mental health and life skills of students, Ph.D. (Education), IFTM University, Moradabad, 2022.
  28. Sharma, Neha: A critical study of effectiveness of Programmed Instruction PI & Computer Assisted Instruction CAI for Mathematical Learning Disability of secondary school students, Ph.D. (Education), IFTM University, Moradabad, 2023.
  29. Thakur, Meena: Teacher effectiveness as related to cognitive style & emotional competence, Ph.D. (Education), Himachal Pradesh University, 2015.
  30. Sharma, Shashi Kant: Effectiveness of IED Programme in Himachal Pradesh- An Evaluative Study, Ph.D. (Education), Himachal Pradesh University, 2011.
  31. Jaya Sharma: A study of the effectiveness of the behaviour of pupil teachers & its implementation in actual teaching, Ph.D. (Education), Hemwati Nandan Bahuguna Garhwal University, 2008.
  32. Thapliyal Latika: Effectiveness of Computer Assisted Teaching in Social science at secondary level, Ph.D. (Education), Hemwati Nandan Bahuguna Garhwal University, 2017.
  33. Vandana: A study of the effectiveness of Chunaoti 2018 in Government schools of Delhi, Ph.D. (Education), Guru Govind Singh Indraprastha University, 2022.
  34. Supriya Dalal: A study of the effectiveness of constructivist Pedagogy on students' achievement in Mathematics of Upper primary level, Ph.D. (Education), Guru Govind Singh Indraprastha University, 2022.
  35. Neetika Sharma: Effectiveness of a module in biology in developing process skills amongst students at secondary school level, Ph.D. (Education), Guru Govind Singh Indraprastha University, 2022.
  36. Rathod Mina H.: Tryout& effectiveness of varied forms of repetition in Geography of std. IX, Ph.D. (Education), Henchandracharya North Gujarat University, 2017.
  37. Chaudhary Vittalbhai V.: Effectiveness of Vedic Mathematical Techniques in the teaching of students of Class VIII, Ph.D. (Education), Henchandracharya North Gujarat University, 2017.
  38. Sathyabalan V.: Effectiveness of Primary Education in rural areas of Tamil Nadu, Ph.D. (Education), Department of Education (CASE), M.S. University of Baroda, 1993.
  39. Maity Sourav: Effectiveness of Open Book examination in English for standard VIII in different environments, Ph.D. (Education), Department of Education (CASE), M.S. University of Baroda, 2016.
  40. Andhariya, Keval R.: The effectiveness of Teacher Educators, Ph.D. (Education), Department of Education, Maharaja Krishna Kumar Singhji Bhavnagar University,
  41. Bhatt Sandhya Harshadbhai: Development and effectiveness of Programme Learning Material for teaching social science subject, Ph.D. (Education), Department of Education, Maharaja Krishna Kumar Singhji Bhavnagar University, 2023.
  42. Boricha, MiteshKumar Vinodbhai: Construction & effectiveness of multimedia package in science teaching for std 7<sup>th</sup>, Ph.D. (Education), Department of Education, Maharaja Krishna Kumar Singhji Bhavnagar University, 2022.
  43. Kumar Mukesh: Effectiveness of direct method in the teaching of English at secondary level an experiment, Ph.D. (Education), Department of Education, Maharaja Ganga Singh University, 2012.

Effectiveness word is used in titles of Ph.D. thesis from serial number 16 to 43. Effectiveness or Effect word should be used only in case of experimental research and so it is mandatory to mention both independent variable as well as dependent variable in title of experimental research. No dependent variable has been mentioned in titles at serial number 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 28, 30, 31, 32, 33, 36, 37, 38, 39, 40, 41, 42, and 43. Effectiveness word has been used in survey research which is technically incorrect. It can be seen in titles mentioned at serial number 16, 17, 21, 27, 29, 31, 33, 35, 37, 38, 39, 40, 41, 42, and 43. Whenever "Effectiveness" word is to be used in the title of Experimental research, one must mention independent variable as well as dependent variable along with population on which the experiment was conducted. Experimental title using effectiveness should be written as "Effectiveness of ..... (IV) ..... on the basis of ..... (DV) of ..... (Population). Almost all researches where effectiveness word was used, researchers mentioned "on" but not "on the basis of". Due to this research titles are technically incorrect. In Survey researches "effectiveness" or "effect" word cannot be used because these words indicate that the research is experimental in nature but not survey research.

Also look at the following titles of Ph.D. thesis for which degree has already been awarded.

44. Iyashree S.J.: Funding for business investment in Indian Solar energy for industrial use, Ph. D. (Economics), Department of Economics, Jain University, 2021.
45. Yeshaswini, V: Technology Addition & development of psychological model, Ph.D (Psychology), Department of Psychology, Jain University, 2023.
46. Ashwini, N.V: Women attempters of self-incineration, Ph.D. (Psychology), Department of Psychology, Jain University, 2021.
47. Shreekanth, G. Naik: Influence of Pharma Sales Force effectiveness support system on performance of Front Line Managers in North Karnataka, Ph.D. (Management), Department of Management, Jain University, 2022.
48. Madan Gurpal Singh: Gandhi and establishment of a peaceful world order, Ph. D. (Sociology), Department of Sociology, Chhatrapati Sahuji Mahraj University, 1993.
49. Chandel, Suman: Impact of rural development schemes on the status of Women: A sociological study with special reference to Una district of Himachal Pradesh, Ph. D (Sociology), Department of Sociology, Chhatrapati Sahuji Mahraj University, 2004.
50. Bhardwaj, N.I.: Study of the impact of integrated rural development programme on weaker sections in Himachal Pradesh with special reference to Sunder Nagar development block of Mandi HP, Ph.D. (Sociology), Department of Sociology, Chhatrapati Sahuji Mahraj University, 1992.
51. Agnihotri, Dinesh Kumar: Study of the scheme of SEDA in Uttar Pradesh, Ph.D. (Sociology), Department of Sociology, Chhatrapati Sahuji Mahraj University, 1983.
52. Firoz Hasan: Study of the attitudes of parents & teachers towards differently abled children of upper primary schools, Ph.D. (Education), Department of Education, Jamia Millia Islamia University, 2017.
53. Chugh, Binney: Study of continuous & comprehensive evaluation from the perspective of student's parents & teachers, Ph.D. (Education), Department of Education, Jamia Millia Islamia University, 2017.
54. Pawan: Impact of teacher and parent related factors on the academic performance of the socially disadvantaged senior secondary students, Ph.D. (Education), Department of Education, Lovely Professional University, 2023.
55. Sabita Kumari: Impact of the implementation of Smart Classroom at secondary schools in Bihar, Ph.D. (Education), Department of Education, Lalit Narayan Mithila University, 2022.

Titles of Thesis mentioned at serial numbers 44, 45, 46, and 48 cannot be the title of research but it may be title of research paper. Titles mentioned at serial numbers from 50, 51, 52, and 53 cannot start with "Study". It may be written as "A Study". "Study" is a verb and verb cannot come in the title because title is a statement but not a sentence. In titles at serial number 49, 54, & 55 "Impact" word has been mentioned which is technically wrong because "Impact" can be used when the population wide spread. Normally State Government and Central Government policies are implemented throughout the State and Country respectively. In the following titles of research Impact word can be used.

A study of impact of Midday Meal on Attendance of Class IV students of Government Elementary Schools of Uttar Pradesh

A study of impact of demonetization on cost of living of Teachers of Higher Education of India

A study of impact of Online Testing on performance in UGC NET exam of students of higher education of Gujarat

In nutshell it can be said that the titles of Ph.D. thesis uploaded on Shodhganga are not technically correct. Hence the quality of research at Doctoral level is too poor. For improving the quality of research, the training in title writing should be given.

### *3.2. In Respective of the Following Titles, Objectives, Hypotheses, and Methodology have been given under Separate Headings*

- I. Divyashree S.J., Funding for business investment in Indian Solar energy for industrial use, Ph. D. (Economics), Department of Economics, Jain University, 2021.
- II. Ankitha, U.: Effectiveness of emotional intelligence on enhancing behavioural and organizational factors of managers from Bangalore, Ph.D. (Psychology) Jain University, 2023.
- III. Yeshaswini, V: Technology Addition & development of psychological model, Ph.D. (Psychology), Jain University, 2023.
- IV. Raju, Naga K: A study of intelligence personality and achievement of secondary school students, Ph.D. (Education), Acharya Nagarjuna University, 2015.
- V. Kankatte, Mallikarjun: A study of effectiveness of programmed instruction as an instructional strategy in physical science, Ph.D. (Education), Acharya Nagarjuna University, 2011.

- VI. Paavizhi, K: Development & effectiveness of Video Assisted Health Education Module in enhancing Knowledge Attitude and Skill among Secondary Teacher Trainees, Ph.D. (Education), Alagappa University, 2021.
- VII. Raja, G.P.: Stress management strategies among arts and science college students in Tamil Nadu, Ph.D. (Education), Alagappa University, 2018.
- VIII. Davis, K. V: Information and communication technology in teaching learning in Meghalaya, Ph.D. (Education), Assam Don Bosco University, 2021.
- IX. Nishad, Shashi Devi: A study of Awareness and perception of Environmental problems and coping among Rural and Urban Women, Ph.D. (Psychology), Awadhesh Pratap Singh University, 2020.
- X. Pandey, Shikha: Effectiveness of smart class on Academic Achievement of students in Social Science, Ph.D. (Education), Banaras Hindu University, 2023.
- XI. Vinayak, Abhaya: Pedagogical considerations of secondary school teachers, Ph.D. (Education), Banaras Hindu University, 2023.
- XII. Kumari, A.: Effect of an instructional programme on socio-emotional learning of elementary students, Ph.D. (Education), Central University of Haryana, 2020.
- XIII. Kumari, M: Teacher Effectiveness of secondary school teachers in relation to teaching competency and Spiritual intelligence, Ph.D. (Education), Central University of Haryana, 2017.
- XIV. Tabish, Sayed Iram: A study of life skill emotional intelligence and digital competency of college teachers, Ph.D. (Education), Central University of Kashmir, 2023.
- XV. Rather, Ravees Ahmad: An objective based evaluation of Teacher Education in Jammu & Kashmir, Ph.D. (Education), Central University of Kashmir, 2023.
- XVI. Teotia, Kumkum: School administrators and teacher awareness and attitude towards inclusive education, Ph.D (Education), Chaudhary Charan Singh University, 2022.
- XVII. Sunder, Shyam: An investigation into the problems of absenteeism in Delhi Schools, Ph.D. (Education), Jamia Millia Islamia University, 1983.
- None of research titles mentioned from serial number I to XVII are technically corrected because a title of research must start with "A study of", and include information about Variable(s), Population, Method of Research and Type of Data.
- ### 3.3. Wording of Objectives
- For the Research Titles mentioned above from serial number I to XVII, a few Objectives are given in the following.
- Ia: To study the current policies, issues, challenges & business models with reference to solar energy.
  - Ib: Compare the financial regulations & policy approach of other developed / developing countries towards green funding for solar energy uses.
  - IIa: To find the difference between the effectiveness of emotional intelligence intervention on innovative work behaviour among managers.
  - IIb: To find the difference between the effectiveness of emotional intelligence intervention on decision making among managers.
  - IIIa: To identify the prevalence of technological addiction among youth adults.
  - IIIb: To find causal correlates leading to the overuse of technology and technological gadgets.
  - IVa: To find out the intelligence of secondary school students.
  - IVb: To find out the intelligence of male and female secondary school students.
  - IVc: To find out the intelligence of urban and rural secondary school students.
  - IVd: To find out the achievement of Hindu and Non-Hindu secondary school students.
  - Va: To study the difference between pre and post scores of academic achievement in physical science of secondary school students in experimental and conventional groups.
  - Vb: To study the difference between experimental and conventional groups with respect to pre-test, posttest and their gain scores of achievement in physical science of secondary school students.
  - VIa: To assess the level of existing knowledge, Attitude and Skill on Health Education among secondary Teacher Trainees.
  - VIb: To develop a module on video assisted health education to enhance the knowledge, Attitude and Skill among secondary Teacher Trainees.
  - VIc: To find out the effectiveness of video assisted health education to enhance the knowledge, Attitude and Skill among secondary Teacher Trainees.
  - VIId: To find out the significant difference between the control & experimental groups with respect to pre and post-test among secondary Teacher Trainees.
  - VIIa: To measure the level of stress among arts and science college students by employing Stress Assessment Scale for college students constructed & standardized by the investigator and the assistance of the supervisor.
  - VIIb: To find out whether there is a significant difference in each of the four dimensions of stress, viz. personal, familial, social and institutional stress among the arts and science college students in terms of the selected independent variables, viz. Gender, Religion,

Community, Domicile, Family Type, Family income, number of intimate friends, education generation, residence, participation in extra-curricular activities.

VIIIa: To examine the degree of the use of ICT in teaching different subjects.

VIIIb: To find out the attitude of teachers & students towards the use of ICT in teaching.

VIIIc: To identify the barriers of the use of ICT in teaching and learning.

IXa: To conduct a study on environmental awareness between rural and urban females at larger sample.

IXb: To find out difference between the awareness responses of young and old females with regard to environmental concern.

Xa: To develop digital content in social science for Class IX.

Xb: To develop an achievement test in social science for Class IX.

Xc: To study the effectiveness of Smart Class Teaching and conventional Teaching on students' academic achievement in Social Science.

Xd: To analyse the comparative effect of smart class teaching and conventional mode of teaching on students' academic achievement in Social Science.

XIa: To identify the reasons behind the classroom practices resulting from their Pedagogical considerations.

XIb: To identify the challenges encountered by teachers in regular classroom teaching practices.

XIIa: Establishing difference in socio-emotional learning in experimental group between Pretest and Posttest.

XIIb: Finding the difference in socio-emotional learning in control group between Pretest and Posttest.

XIIc: Studying the difference in socio-emotional learning between experimental and control group.

XIId: Comparing socio-emotional learning of students of Government and Private Schools.

XIIIa: To study the Teacher Effectiveness of secondary school teachers.

XIIIb: To study the Teaching Competency of secondary school teachers.

XIIIc: To study the Spiritual Intelligence of secondary school teachers.

XIIId: To compare the Teacher Effectiveness of government and private secondary school teachers.

XIVa: To study digital competency of college teachers.

XIVb: To study digital competency of college teachers on the basis of gender.

XVa: To examine the present status of Teacher education institutions in Jammu & Kashmir with special reference to

- Physical & digital infrastructure
- Libraries & e-resources / e-book
- Laboratories

- Lab schools

- Faculty strength

XVb: To study the intake & enrolment of teacher education institutions of Jammu & Kashmir.

### Research Question:

XVa: What is the present status of teacher education institutions of Jammu & Kashmir?

XVb: What are the educational experiences of teacher trainees about the teacher education being offered in the teacher education institutions of Jammu & Kashmir?

XVIa: To study & compare awareness towards inclusive education between administrators of Primary Schools and Teachers of Primary Schools.

XVIb: To study & compare attitude of Primary Schools administrators and Primary Schools teachers towards inclusive education.

XVIIa: To find out the degree of acuteness of absenteeism in schools of Delhi.

XVIIb: To identify the type of absence prevailing in schools.

XVIIc: To determine relationship, if any, between absenteeism and socio-economic status of the family.

Objectives reflect the intention of the researcher. Thus objective cannot start with "To find", "To find out"; "To identify"; "To assess", "To develop", "To measure", "To examine", "To conduct", "To analyse", "Establishing difference", "Finding the difference", "comparing", "To study & compare", "To determine". Objective(s) must be pin-pointed. None of the objectives mentioned above is pin-pointed. Further while writing Objective(s), one must consider the type of data. The data can be qualitative or quantitative. The wording of objective mention at serial number Ia is the most appropriate and the type of data is qualitative. While writing objective for quantitative research, researcher must use some statistical terms like "mean" or "correlation" or "association".

### 3.4. Wording of Hypothesis

For the objectives mention above from I to XVII, the following hypotheses were formulated by the researchers.

- Ia. The policies of government have positive impact on industries so that they invest on solar energy.
- Ib. Funding by financial institutions to industries exclusively for solar power generation have positive impact.

- Ila. There is no significant relation of emotional intelligence intervention on innovative work behaviour among managers.
- Ilb. There is no significant relation of emotional intelligence intervention on decision making among managers.
- IVa. There is no high intelligence in secondary school students.
- IVb. There is no significant difference in intelligence of male and female secondary school students.
- IVc. There is no significant difference in intelligence of urban and rural secondary school students.
- IVd. There is no significant difference in achievement of Hindu and Non-Hindu secondary school students.
- Va. There is no significant difference between pre and posttest of academic achievement in physical science of secondary school students in experimental and conventional groups.
- Vb. There is no significant difference between experimental and conventional groups with respect to pre-test, posttest and their gain scores of achievement in physical science of secondary school students.
- VIa. The level of existing knowledge, Attitude and Skill on Health Education among secondary Teacher Trainees is moderate.
- VIId. There is a significant difference between the control & experimental groups with respect to pre and post-test among secondary Teacher Trainees.
- VIIa. There is no significant difference between socio-economic background and personal stress of college students.
- VIIb. There is no significant difference between socio-economic background and familial stress of college students.
- VIIc. There is no significant difference between socio-economic background and social stress of college students.
- VIIId. There is no significant difference between socio-economic background and institutional stress of college students.
- VIIIa. There is no significant difference in use of ICT in teaching different classes.
- VIIIc. There are no benefits and barriers to the use of ICT in education.
- XIa. There will be no difference between the environmental awareness ability among rural and urban females at larger sample.
- XIb. Young and old participants may differ in their responses with regard to environment.
- Xa. There is no significant effect of Smart Class Teaching & Conventional Teaching on the students' academic achievement in Social Science.
- Xb. There is no significant difference between Smart Class and Conventional mode of teaching on students' academic achievement in Social Science.
- XIIa. There is no significant difference in socio-emotional learning in experimental group between Pretest and Posttest.
- XIIb. There is no significant difference in socio-emotional learning in control group between Pretest and Posttest.
- XIIc. There is no significant difference in socio-emotional learning in experimental and control group.
- XIIId. There is no significant difference in socio-emotional learning of students of Government and Private Schools.
- XIIIa. There is no significant difference in Teacher Effectiveness of government and private secondary school teachers.
- XIVa. There is no significant difference in male and female college teachers on digital competency.
- XVIa. There is no significant difference between the awareness of Primary Schools administrators and Teachers of Primary Schools towards inclusive education.
- XVIb. There is no significant difference between the attitude of Primary Schools administrators and Teachers of Primary Schools towards inclusive education.
- XVIIa. The phenomena of late coming, rather than skulking away after the recess, is prevalent more among the school boys.
- XVIIb. The problem of absenteeism is more acute in Government than in aided schools.
- XVIIc. The socio-economic status has inverse relationship with the incidence of absenteeism.

None of the above mentioned hypotheses are technically correct because these cannot be tested as the corresponding objectives are not written by using "mean" or "correlation" or "association". Hypothesis has to be tested by analyzing the data with the help of appropriate statistical technique. From the wording of objectives it is not possible to decide the statistical technique to be used for analyzing the data and without which, hypothesis cannot be tested.

#### 4. Sampling Techniques

Sampling Techniques are broadly classified into Probability Sampling Techniques and Non-Probability Sampling Techniques. Population must be mentioned in the title so that one can decide whether Probability Sampling Technique or Non-Probability Sampling Technique is to be used. In case of Probability Sampling Techniques, the wording of objective can help in deciding

Probability Sampling Technique. Population is not part of the title of research given at serial number I, III, IV, V, VI, VIII, IX, X, XI, XII, XIII, XIV, XV and XVI. Only from title of research mentioned at serial number II, and VII the population mentioned is “Managers from Bangalore”, and “Arts and Science College students in Tamil Nadu” respectively. Although from the thesis it was found that all researchers used Probability Sampling Technique for selecting Sample. Further in majority of cases researcher mentioned that the sample was selected with the help of Purposive Sampling Technique. In fact Purposive Sampling Technique belongs to Non-Probability Sampling Technique. Thus the researchers are quite weak in respect of Sampling Technique used for selecting sample.

## 5. Tool

Tool has to be decided for assessing the variable. From the objective(s) of the research one can know the name of the variable. In fact tools have been classified as Standardized Tools and Un standardized Tools. The Test, Scale and Inventory are the Standardized Tools while Observation Schedule, Interview Schedule and Questionnaire are unstandardized tools. Most of the researchers have mentioned in their thesis that the data were collected with the help of Questionnaire which is technically wrong because as per the variables, the most appropriate tool should have been Test or Scale. In rare case Questionnaire as a tool was appropriate.

## 6. Method of Research

Title of research should give information about variable(s), Population, Method of Research and Type of Data. In title at serial number II, effectiveness word used is wrong because treatment has not been mentioned. As per wording of title, it is evident that the researcher has conducted survey research but not experimental research. No dependent variable is mentioned in title given at serial number V. Whenever “effectiveness” word is used in the title then it must give information about independent variable and dependent variable. Population is not part of research title at serial numbers IV, V, IX and XIV. Title of research mentioned at serial numbers III, VI, VII, VIII, XI, XII, XIII, XV, XVI, and XVII are not of Research but paper. On the whole titles of research in education given in Shodhganga are not written

correctly. One of the reasons is that teachers do not teach the procedure of writing title. Even books also do not give such information. Also students do not think and assess their own title of research.

## 7. Data Analysis

From objectives mentioned above from serial number I to XVII are not pin-pointed. Keeping the above mentioned objectives, it is difficult to decide the data analysis. In case of qualitative research the data can be analysed with the help of Content Analysis, Meta-Analysis and SWOT / SWOC Analysis. Keeping in mind the wording of objectives mentioned at serial numbers I<sub>a, b</sub>; III<sub>a, b</sub>; VIII<sub>c</sub>; IX<sub>a, b</sub>; and XV<sub>a, b</sub>, it is difficult to decide which qualitative technique is to be used for analyzing data collected from the above mentioned objectives. For the remaining objectives, quantitative data were obtained but from the wording of objectives it is not possible to decide the statistical technique to be used for analyzing the quantitative data.

## 8. Conclusion

On the whole the researches uploaded in the Shodhganga, are too weak from all points of view. There is an urgent need to think of teaching and evaluation strategy to be used in higher education institutions so that the quality of research can be improved.

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## Authorship Contribution

Authors have contributed equally to the study.

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## Conflict of Interest

There is no conflict of interest.

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