

# **CHAPTER VI**

## **SUMMARY, FINDINGS, DISCUSSION AND IMPLICATIONS**

### **6.1 INTRODUCTION**

After having presented the data analysis and interpretation the next step is to give a comprehensive and elaborative picture of the scenario that emerged from the process done in the previous chapters. This study has been given in detail in the previous chapters, yet, in this chapter, the study is presented in nutshell under headings like Need of study, Research Questions, Research Gaps Identified, Rationale, Statement of the Problem, Objectives, Hypotheses, Sample, Design, Tools, Procedure of Data collection, Data Analysis techniques, Findings and Implications, Discussion and Suggestions are provided in the following sections.

### **6.2 PROLOGUE**

Research is an innate human proclivity, in which curiosity is imperative substance. One might as well call curiosity or inquisitiveness as the mother of research (Chandola, 2008). Educational Research, in particular, is that activity which is directed towards the development of a science of behavior in educational situations to make better insight into the issues and problems of educational settings. With the unprecedented growth in all walks of life, the numbers of research coming out of the educational institutes are also increasing significantly. At the same time, there is a need to check and monitor these researches as far as the quality of research is concern. The lack of monitoring and the proper evaluation patterns lead to researches with no value (Sekar, 2008). Rais & Madhulika (1991), Raina & Sengupta (1979), Dahiya (2001), Gupta (2003), Nagaraju(2004), Singh & Desai (2009) sarcastically criticized the researches due to their poor coverage of the ideas based on easiness of getting degrees, unethical practices at the higher education level and recommended to appraise the status of the Educational Research time to time in particular and overall research in general. Different studies viz. Buch (ed.), 1974; Glass, 1976; Buch (ed.), 1979; Glass, McGraw & Smith 1981; Buch (ed.), 1987; Sujatha, 1988; Cooper, 1989; Sahoo, 1992; Panda, 1992; Cooper & Hedges, 1994; Prasad & Ramakrishnan, 1999;

Venkataiah, 2001; Kaul, 2006; Mishra, 2002; Goel et.al., 2007; Gupta and Koul, 2007; Sekar, 2008; Meduri & Satyanarayan, 2008; Dinkar, Kothari & Shelat, 2009; Yadav 2011; and Desai, Singh & Yadav, 2011; Eđmir, Erdem and Koçyiđit, 2017 and Livingston & Flores, 2017; reported poor condition in the dissemination of the research findings of educational research, poor identification of the research gaps, non-scattering of findings of the researches, intentional duplication of the researches, Plagiarism, Non-uniform growth in different areas of the educational research & lack of reviews and trend analysis of the researches done. Nagaraju (2004) also critically commented on the scenario of the Educational Research on India and claimed that many Educational Researches promoted in the departments of Education in Indian Universities lack the perspective of Education. Singh & Desai (2009) stressed the need for keeping a track of the researches already done to bring quality in Educational Research and to guide the future course of action for Educational Research.

One thing is coming out clearly that the system of monitoring/ reviewing/ evaluation/ analyzing the process of any kind of research at any level is essential, therefore the present piece of research was found necessary. In an institution— what are the nature of problems/areas/themes were taken into consideration under research? Which research area is dominating and which other lacks attention? How much already being done in a particular area of research and what is been proposed? How/where/when/ it was done? What methods/techniques/tools were utilized? What results were emerged out and how they were reported? What conclusions were made? How many variations were there in the results and conclusions of similar problems? Are these findings are converging somewhere or diverging too much? How one could synthesize research findings? Does such synthesis lead to some reality? Is there any consistency in these various singleton study findings? Are these individual researches really converge somewhere or these remain stand-alone? How the contradictory results will be resolved lies there among the various studies findings responding to the same research question? Are philosophical research studies can be synthesized? What are the methods of synthesizing research outcomes of empirical studies? The present paper tries to focus on the issue of individualistic research versus the Wholistic reality. What can be methods/tools to synthesize these piecemeal researches into a comprehensive truth to arrive at some meaningful conclusion?

The present study is an attempt, to find satisfactory answers to the aforementioned questions so as to direct future research in the light of empirical pieces of evidence in the form of researches that already been carried out, while reviewing, Trend analyzing and synthesizing the same.

### **6.3 TREND ANALYSIS AND RESEARCH SYNTHESIS**

By *Oxford Dictionary* (2019), the term ‘trend’ means—‘A general direction in which something is developing or changing’ or ‘fashion’ or ‘Change or develop in a general direction.’ The term ‘Analysis’ means—‘...detailed examination of the elements or structure of something.’ Or ‘...the process of separating something into its constituent elements’. The literal meaning of Trend Analysis is the ‘...The practice of collecting information and attempting to spot a pattern or change in the given information’.

**Research synthesis** may be defined as a review of primary research on a given topic with the purpose of integrating the findings (e.g., for creating generalizations or resolving conflicts across studies and identifying emerging trends). *Merriam Webster Dictionary* defines Research Synthesis as “...a quantitative statistical analysis of several separate but similar experiments or studies in order to test the pooled data for statistical significance...” Further, as per the *Oxford Dictionary* (2019), “Research synthesis is the examination of data from a number of independent studies on the same subject, in order to determine overall trends”. Research synthesis is central to the scientific enterprise. Without it, the evidence for various alternative hypotheses cannot be properly evaluated and generalizations cannot be reached, thus, advances of the scientific field as well as any potential practical applications are inhibited. Research synthesis can be performed either qualitatively, in the form of a narrative review, or quantitatively, by employing various statistical methods for the integration of results from individual studies. (Koricheva, J. and Gurevitch, J., Mengersen, K., 2013).

Trend analyzing and Research synthesis helps to produce answers to new questions that cannot be addressed easily in individual studies and to identifying the sources of heterogeneity in researches. (Mosteller and Colditz, 1996).

#### **6.4 IMPORTANCE OF THE STUDY**

The present study is helpful—

- To researchers /research guides, as they will have research abstracts of the studies carried out at the School of Education, Devi, Ahilya Vishwavidyalaya, Indore. They will come to know about the research trends with respect to the various components of research. They could decide about the future course of action for carrying out research.
- To increase in the volumes of research done in this area of Trend Analysis and Research Synthesis, for more authentic and reliable data for cross-checking the theses.
- To decision-makers & practitioners of Educational Research in the department to shape future research by taking a keen look at the identified trends and inclinations with respect to the various components of the research.
- In encouraging and helping research workers, scholars, teachers, and others interested in Educational Research related fields and professionals of teacher education, to locate and to fill research gaps in the aspects need due attention.
- By presenting a comprehensive synthesis of research findings related to the variables studied so as to locate which variables needed to be studied further and which were studied abundantly.
- To gain a background of the researches earlier done, to acquaint researchers with the current pool of knowledge in the field in which one conducts its research and to know about what others have already attempted.
- To synthesize research findings and conducting meta-analysis so as to chalk out single reality, if any.
- By providing a medium of dissemination of research findings of Educational Research carried out at the School of education, Devi Ahilya Vishwavidyalaya, Indore to exchange of experience among research workers, scholars, teachers, and others interested in Educational Research related fields and professionals of educational areas.

## **6.5 IMPLICATIONS AND RESEARCH GAPS FROM REVIEW OF RELATED LITERATURE**

Review of related literature in the area of Research trends and Synthesis in Educational Research and allied disciplines was conducted in two categories. The first category comprises those studies which are conducted in India and the second category comprises the studies conducted abroad. Summarizing the review of related literature following observations and implications were made.

- It is evident that various attempts have been made to document the trends in Educational Research. Prominent among them are the five surveys of research in education (Buch 1974, 1979, 1987, 1991; NCERT, 1997).
- Drawing upon these and some other recent sources such as Indian Educational Abstracts, also initiate the task of recording the research abstracts to delineate the trend of research in education.
- All reviewed researches focused on analyzing, reviewing the research at a regular interval of time.
- All reviewed researches stressed on identifying the emerging trend and to avoid repetitions of research.
- Venkataiah (2001), Gupta (2003), Gupta and Koul (2007), Singh & Desai (2009) and Singh et.al. (2011) reported the lack of research writing skills in the doctoral level research.
- Apart from recording the research abstracts, the surveys also contain the Trend reports exhibiting trends of the Research problem taken, Sampling used the type of research, Methodology of Research, tools techniques used, along with the needed aspects to be focused in particular areas. The gaps were also highlighted in these trend reports. But after the Fifth Survey of research in Education, there is a lack of detailed area-wise trend report about the scenario of educational research
- A similar attempt of collecting abstracts of researches and identifying trend was also carried out in Passi & Rama (1977) and Raina & Sengupta (1979), NCERT (2007), NCERT (1996-2009) in form of Journal of Indian Educational Abstracts, Goel et. al (2007, 2008, 2010) and Sansanwal (2007) at the national level.
- Rais & Madhulika (1991), Raina & Sengupta (1979), Dahiya (2001), Venkataiah (2001), Gupta (2003), Nagaraju (2004), Singh & Desai (2009)

sarcastically criticized the researches due to their poor coverage of the ideas based on easiness of getting degrees, unethical practices at the higher education level and recommended to appraise the status of the Educational Research time to time in particular and overall research in general.

- Sahoo (1992), Panda, Satyanarayana & Sharma (1996), Sujatha (1998), Mishra (2002), Gupta (2003), Sahoo (1992), Kaul (2006), Meduri & Satyanarayan (2008), Eva, Olaf & Sebastian (2009) conducted studies in the distance education i.e. non-formal education at the Higher Education level and accordingly suggestions were given.
- Goel et.al. (2008); Goel et.al. (2008); Goel et.al. (2010) abstracted and classified doctoral research done in various areas of education since 1998.
- Zane, Berge & Susan (2004); Olaf, Eva & Sebastian (2009); Lee, Wu & Tsai (2009); Ayfer & Yasemin (2009); Zao & Gang (2009); Bretones, Paulo & Megid (2011); Maurer, Khan & Salman (2010); Shetty, Hiremath, Murugan & Sreeja (2010); Chang; Chang & Tseng (2011) studied and reviewed the journal articles and made further recommendations about filling up gaps in the research areas left unattended.
- Unsatisfactory conceptual framework, unsatisfactory conceptual understanding of research problem, poor research designs, Lack of vision for education were reported in Venkataiah (2001), Gupta (2003), Gupta and Koul (2007), Henk (1999), Zane, Berge & Susan (2004); Olaf, Eva & Sebastian (2009); Lee, Wu & Tsai (2009); Ayfer & Yasemin (2009); Zao & Gang (2009); Bretones, Paulo & Megid (2011); Maurer, Khan & Salman (2010), Yadav (2011) and Livingston & Flores (2017).
- Quantitative methods were found dominating was reported in Koul (1991), Raina & Srivastava (1997), Gupta and Koul (2007) and Yadav (2011), Ebru, Ayca, Pinar Mustafa and Murat (2013), Eđmir, Erdem and Koçyiđit (2017) and Livingston & Flores (2017).
- Lack of Qualitative and Mixed method researches in the Educational Research was pointed out by Koul (1991), Raina & Srivastava (1997), Gupta and Koul (2007) and Yadav (2011), Ebru, Ayca, Pinar Mustafa and Murat (2013), Eđmir, Erdem and Koçyiđit (2017) and Livingston & Flores (2017).

- Vote counting method of Research findings synthesis was incorporated in Mohanty (19889), Jawade (1990), Cwikel, Behar and Rabson (2000) and Higgins and Green (Eds.) (2011).
- The two methods of Research synthesis, viz. Vote Counting method and Meta-Analysis method yields similar results were reported by Cwikel, Behar, and Rabson (2000). But Higgins and Green (Eds.) (2011) criticized the research synthesis method of Vote counting but recommended to use the same when standard meta-analysis methods cannot be used.
- At School of Education, Devi Ahilya Vishwavidyalaya, Indore, attempts were made by Pal (1984), Singh (1987), Shaheen (1994) and Singh, Desai & Yadav (2010). Pal (1984) covered the studies from 1979-1984, Singh (1987) covered the studies done in the time period of 1985-1986; Shaheen (1994) done an M.Ed. Dissertation of reviewing the Dissertations of the only one the year 1992-93 and Yadav (2011) done a dissertation on reviewing the M.Ed. research studies during 2001-2010.
- For the researches at School of Education Devi Ahilya Vishwavidyalaya, Indore, after Pal (1984), Singh (1987) no attempts were made for reviewing & trend analyzing the Educational Research, except NCERT (2007) and Sansanwal (2006) for Ph.D., M.Phil. and research Projects.
- Since Inception of School of Education, Devi Ahilya University, Indore, no attempts for Research synthesis, at any level of research, was taken up. Thus, there is a need for reviewing research, trend analysis and carrying out research synthesis at Ph.D., M.Phil. and research projects level at the School of Education, Devi Ahilya Vishwavidyalaya since inception.

Conclusively, from the implications of the review of related literature, a need was felt to carry out trend analysis and research synthesis at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, since inception. The ways and means of carrying out trend analysis and research synthesis at the School of Education, Devi Ahilya Vishwavidyalaya, Indore are been detailed in the next chapter.

## **6.6 RATIONALE FOR THE STUDY**

Nowadays, Researches are carried out at the individual level to make one acquire an academic qualification, such as M.Ed., M.Phil. or Ph.D. and research projects, as far as the Educational Research, in particular, are concerned. The

numbers of research coming out of the educational institutes are increasing significantly (Table 1). There is a need to check and monitor these researches as far as the quality of research is a concern. The lack of monitoring and the proper evaluation patterns lead to researches with no value (Sekar, 2008). Rais & Madhulika (1991), Raina & Sengupta (1979), Dahiya (2001), Gupta (2003), Nagaraju(2004), Singh & Desai (2009) sarcastically criticized the researches due to their poor coverage of the ideas based on easiness of getting degrees, unethical practices at the higher education level and recommended to appraise the status of the Educational Research time to time in particular and overall research in general.

Different studies viz. Buch (ed.) (1974); Buch (ed.) (1979); Buch (ed.) (1987); Sujatha (1988); Sahoo (1992); Panda, Satyanarayana & Sharma (1996); Ramakrishnan & Prasad (1999); Kaul (2006); Mishra (2002); Goel et.al. (2007); Sekar (2008); Meduri & Satyanarayan (2008); Singh & Desai (2009); Kothari et. al. (2009); Yadav (2011) and Singh et.al., 2011 reported poor condition in the dissemination of the research findings of educational research, poor identification of the research gaps, non-scattering of findings of the researches, intentional duplication of the researches, Plagiarism, Non-uniform growth in different areas of the educational research & lack of reviews and trend analysis of the researches done.

Nagaraju (2004) also critically commented on the scenario of the Educational Research on India and claimed that many Educational Researches promoted in the departments of Education in Indian Universities lack the perspective of Education. Singh & Desai (2009) stressed the need for keeping a track of the researches already done to bring quality in Educational Research and to guide the future course of action for Educational Research. One thing is coming out clearly that the system of monitoring/ reviewing/ evaluation/ analyzing the process of any kind of research at any level is essential, therefore the present piece of research is necessary.

From the reviewed literature, it is clear that, in the field of Educational Research Buch (ed.) (1974), Buch (ed.) (1979), Buch (ed.) (1987), Buch (ed.) (1991), NCERT (1997), Sansanwal (ed.) (2006), Indian Educational Abstracts, Goel et.al. (2007, 2008, 2010) had carried out task of collection of the abstracts of doctoral degree theses and Research Projects at national level in Indian context. Also, similar attempts were made by Pal (1984), Singh (1987), Shaheen (1994),

Yadav (2011) and Singh et.al. (2011) as far as the doctoral researches & research projects at School of Education, Devi Ahilya Vishwavidyalaya is concerned. Another issue of interest that provided motivation for a present piece of research is, periodic reviews of the studies at School of Education were done in Pal (1984), Singh (1987) Yadav (2011) and Singh et.al.(2011). But after Pal (1984) and Singh (1987), no further systematic effort was taken up in reviewing the research except NCERT (2007) and Sansanwal (2006) at the national level and Yadav (2011) & Singh et.al. (2011) at the departmental level. Even NCERT (2007) and Sansanwal (2006) had collected the abstracts of the Doctoral theses from 139 Indian universities. From the reviewed literature and its implication, it is evident that Educational Research at M.Phil. and M.Ed. level was not included in any of the above research studies, especially at the School of Education after 1995. Also, Yadav (2011) taken up a study to review the educational research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore by reviewing studies of M.Ed., M.Phil, and Ph.D. level, randomly selecting the studies held during 2001-2010.

Concluding the above, Researcher found research gaps regarding

- Non-inclusion of the M.Phil. & M.Ed. Studies in the any of the above research studies (except Third-year book of Education (1968), Pal (1984) and Singh (1987) Panda, Satyanarayana & Sharma (1996); Yadav (2011) and Singh et.al. (2011))
- No attempt was made to report/review the researches at M.Phil. & M.Ed. the level at School of Education after 1987 except Yadav (2011) and Singh et.al. (2011) and;
- Lack of Research Synthesis and trend analysis of the educational research at the School of Education, Devi Ahilya Vishwavidyalaya since Inception, at any level of research.

These research gaps lead to formulating the base for the present piece of research.

The need for this type of study is felt due to the time, money & energy involved in the searching & arranging of the research literature. The researcher felt its importance because of the rising need for computer and educational technology intrusion as the most effective media for educational upsurge & for easy access to the literature of School of Education, Devi Ahilya Vishwavidyalaya, Indore, the researcher is attempting for a database of all the research studies.

The researcher firmly believes the present study can encourage and help research workers, scholars, teachers, and others interested in Educational Research related fields and professionals of teacher education, to locate and to fill research gaps in the aspects that need due attention. The present research also may help the research guides to identify the new areas and to pay more attention to the aspects within the research given less attention.

Also, present research may provide a medium of dissemination of Educational Research and exchange of experience among research workers, scholars, teachers, and others interested in Educational Research related fields and professionals of educational areas. At the same time, the present piece of research will lead to an increase in the volumes of research done in this area, for more authentic and reliable data for cross-checking the theses.

It has been observed that it is necessary to have periodic reviews of the studies of Educational Research in an institution so that a trend of developments can be evolved which will act as a guide to future action, such reviews in different areas help in planning the future research.

Working on the philosophy of 'Think Globally and Act Locally', the present study may be called, a sort of, descriptive study in terms of geographical area, as School of Education, Devi Ahilya Vishwavidyalaya is taken up. The researcher, being part and parcel of the institution, has the opinion that present research will help the decision-makers & practitioners of Educational Research in the department to shape future research. So the present piece of research is formulated about the School of Education, Devi Ahilya Vishwavidyalaya, Indore.

The sample for the study includes the Educational research done at the School of Education, Devi Ahilya Vishwavidyalaya, Indore since inception. The reason of considering studies from inception is the belief that it will give an idea about the trends occurred at different point of time in the development of the department to its present status and further gives light to the future researches. Further, there is a lack of systematic effort to locate the trends empirically since inception. Few efforts in this direction were made by Pal (1984) & Singh (1986) but it includes the abstracts only. The effort done by Shaheen (1994) includes the studies for one year only and Yadav (2011) had a systematic effort but it reviewed the studies with a randomly selected sample rather than the exhaustive one.

## **6.7 RESEARCH QUESTIONS**

In the light of the aforesaid, being part and parcel of School of Education, this study is undertaken with a view to finding the answers for the following research questions coming to every concerned mind related to the field of Education:

- How the Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore synchronized with that of national-level Educational Research?
- Which areas of the Educational Research had been least/most attended in the Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- What will be the nature of the Research synthesis of the research studies at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- How the Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore complements and supplements the earlier researches?
- Do Educational Researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore Reviews literature comprehensively?
- To what extent the Research gaps were identified in the Educational Researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- Which different research methodologies, types of data analysis techniques, types of research tools/techniques, Reference style been used in Educational research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- What Geographical/ Social/ Educational areas are/were being covered by the Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- What is the trend related to the output of the Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- Which variables were most studied in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?

- How one can synthesize the findings that emerge out from the different researches carried out at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- What could be the future course of action for conducting Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- What is the consolidated reality of different singleton researches carried out at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?
- What implications will emerge out after synthesizing the research findings from different researches carried out at the School of Education, Devi Ahilya Vishwavidyalaya, Indore?

All these thoughts made the researcher leading to formulate the present piece of research in the following manner.

## **6.8 TITLE OF THE STUDY**

The study was titled as— **Trend Analysis of the Educational Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore**

## **6.9 OBJECTIVES OF THE STUDY**

The Objectives of the study are:

1. To prepare abstracts of the Educational Researches (Ph.D. Theses, M. Phil. Dissertations, and Research Projects) conducted at the School of Education, Devi Ahilya Vishwavidyalaya Indore.
2. To classify and categorize the Educational Research conducted at the School of Education, Devi Ahilya Vishwavidyalaya Indore.
3. To review and identify the Emerging trend of Educational research at the School of Education, Devi Ahilya Vishwavidyalaya Indore with respect to
  - i. Basic information about the Research
  - ii. Physical information about the Research
  - iii. Area of the research
  - iv. Reviewed Literature
  - v. Methodology of research
  - vi. Type of research
  - vii. Sampling technique used

- viii. Tools used
  - ix. Data analysis technique used
  - x. Reference styles used
  - xi. Final Output of the Research
4. To synthesize the findings of Educational researches based on the variables studied in the Educational Researches conducted at the School of Education, Devi Ahilya Vishwavidyalaya Indore.

#### **6.10 OPERATIONALIZATION OF THE TERMS**

The major terms viz. Database, Review, Trend Analysis and Research Synthesis been used in the present piece of research. Considering their broad meanings which may further lead to various interpretations, these terms were being operationalized as follows.

- **Database:** A database is an organized collection of data for one or more purposes, usually in digital form. For the present research the database will be a set of records about the educational research done at the School of Education, Devi Ahilya Vishwavidyalaya Indore with respect to the various fields/attributes of the Educational Research like Investigator name, Guide name, Type of research, Area of research, Type of variables used, and information with respect to different components of research.
- **Trend Analysis:** Trend Analysis is the practice of collecting information and attempting to spot a pattern in the information. By trend, the researcher means consistency in and with respect to the nature of research, area of research, Methodology, tools, sample, data analysis techniques, the emerging thesis of the study, variables studied, referencing style and findings of the research. The convergence of corresponding findings will represent the emerging trends. Thus, the trend analysis will be the process of identifying and analyzing such convergence.
- **Review:** A review means here an evaluation of a publication and a retrospective view, about the product of the research. For the present research, Review means the synoptic retrospective evaluative view to reporting the features of the educational research done at the M.Ed., M.Phil. Education, Ph.D. Education level along with the research projects with respect to various components like Basic information about the

Educational Research, Physical information of the Educational Research, Area of the research, Reviewed literature, Methodology of the research, Type/method of the research, Sampling used, Tools used, Data analysis technique used, Reference style used and Final Product of the educational Research.

- **Research Synthesis:** it is a review of primary research on a given topic with the purpose of integrating the findings (e.g., for creating generalizations or resolving conflicts). Research synthesis is an examination of data from a number of independent studies of the same subject, in order to determine overall trends.

## **6.11 METHODOLOGY**

The methodology adopted in the present study is mentioned in the following sections.

### **6.11.1 DESIGN OF THE STUDY**

The present study was a descriptive kind of study where the researcher attempts to find out the trend of Educational Research carried out at the School of Education, Devi Ahilya Vishwavidyalaya during 1964-2014.

### **6.11.2 TOOL**

For the study, to collect the required data, an Educational Research Information and Review Schedule (Appendix—B) was developed by the Investigator. The researcher had ensured Face validity of the tool by referring the same to a team of experts in the field of Educational Research

### **6.11.3 DELIMITATION OF THE STUDY**

The present study was delimited with reference to the area, level of courses and time span as follows:

- The study was delimited to the Educational Research at Master of Philosophy in Education (M.Phil. Education), Doctor of Philosophy in Education (Ph.D. Education) and Research Projects carried out in the time period of 1964-2014.
- To realize these objectives, a descriptive method was used. The study was delimited to the Ph.D., M.Phil. and Research Projects carried out in the time

period of 1964-2014 at School of Education, Devi Ahilya Vishwavidyalaya, Indore.

- For the third objective, the study was delimited to the 11 components namely
  - i. Basic information about the research
  - ii. Physical information about the research
  - iii. Area of the research
  - iv. Reviewed Literature
  - v. Methodology of the research
  - vi. Type of research
  - vii. Sampling technique used
  - viii. Tools used
  - ix. Data analysis technique used
  - x. Reference styles used
  - xi. Final Product
- For the fourth objective, the delimitation while conducting the synthesis of the research findings was as follows. Only those studies were taken into consideration in which —
  - a. ‘the hypothesis was tested’ were taken into the account for research synthesis
  - b. only the linear effect of the Independent variable on the Dependent variable was studied.
  - c. The interaction effects of the Independent variables on the dependent variable were not taken into account for the research synthesis.
  - d. Philosophical Researches, some analytical surveys, case studies were not taken into account for research synthesis as qualitative synthesis (Narrative Approach) was needed for them.

The afore-mention delimitation for fourth Objective results into a total of 207 studies (108 Ph.D., 87 M.Phil. and 12 Projects) out of 290 that were taken into account for the present synthesis of research findings (Details are given in Chapter 5).

#### **6.11.4 DATA COLLECTION PROCEDURES**

During 2013-16, the required data was collected from primary and secondary sources like the School of Education’s Departmental library, University

Central Library, Personal Copies hold by the researchers/Guides and Research surveys, using Educational Research Information and Review Schedule (Appendix—B).

### 6.11.5 DATA ANALYSIS

The following techniques were used to analyze the data.

For Objective—1, Content Analysis was used to prepare the abstracts of the studies. For Objective—2 and Objective—3, Classification & Categorization of the educational Researches and trend Analysis were done by the Frequency Count, Percentage, Mean, Content analysis (Inducto-Deductive method and Analetico-Synthetic method) was used.

For Objective—4, the Vote Counting Method of Meta-Analysis was used to synthesize the research findings.

## 6.12 FINDINGS

For the convenience of understanding, along with the findings, implications are also given. The Objective-wise findings along with implications that emerged from the present study are mentioned in the following sections—

### 6.12.1 FINDINGS WITH RESPECT TO OBJECTIVE—1

The objective—1 of the study is, “*To prepare abstracts of the Researches (Ph.D. Theses, M. Phil. Dissertations, and Research Projects) conducted at the School of Education, Devi Ahilya Vishwavidyalaya, Indore.*”

The findings with respect to the objective—1 are as follows:

- The Abstracts for a total of 290 studies including 149 Ph.D. studies, 124 M.Phil. Studies and 17 Research Projects were prepared.
- Out of 161 Ph.D., 131 M.Phil., and 27 Research Projects studies during the time span of 1964-2014, only 149 Ph.D. studies, 124 M.Phil. Studies and 17 Research Projects could be located using primary and secondary sources. The rest of the research reports were not found.

#### **Implication:**

- *Regular and periodic attempts should be made for the abstractization of the research studies so as to make ease of availability of synoptic findings of the research for the forthcoming researchers.*

- *Missing thesis, Dissertations, and Project reports could have made some more impact for the present study, so the library management system should be made strengthen so as to safeguard the research reports for such and other future uses.*

### **6.12.2 FINDINGS WITH RESPECT TO OBJECTIVE—2**

The objective—2 of the present study is, *“To classify and categorize the Educational Research conducted at the School of Education, Devi Ahilya Vishwavidyalaya, Indore.”*

The findings with respect to objective—2 were as follows:

- For a broader Classification, the abstracts of the studies were categorized under 29 Areas/chapters keeping in mind the nature of the study, Area mentioned, Major and Minor areas of study and Outcome of the research.
- These 29 areas/chapter were ‘Adult, Continuing & Non-Formal Education’, ‘Comparative Education’, ‘Correlates of Education’, ‘Creativity’, ‘Curriculum Development’, ‘Distance Education’, ‘Ecology & Environmental Studies In Education’, ‘Educational Planning and Policy Research’, ‘ET/ICT’, ‘Futurology of Education’, ‘Guidance and Counselling’, ‘History of Education’, ‘Language Education’, ‘Library Education’, ‘Mathematics Education’, ‘Measurement, Assessment, and Evaluation’, ‘Music Education’, ‘Organization, Administration and Management’, ‘Philosophy of Education’, ‘Population Education’, ‘Primary Education’, ‘Psychology of Education’, ‘Science Education’, ‘Sociology of Education’, ‘Special Education’, ‘Teacher Education’, ‘Value Education’, ‘Vocational Education’, and ‘Women Education’.
- Each study was allocated one Major area and Minor area as per the nature of the study. Thus, studies were categorized into a total of 22 Chapters/categories under Major area and 25 Chapters/Categories under Minor areas of the study.
- Total 22 Chapters/categories under Major area were ‘Adult, Continuing & Non Formal Education’, ‘Correlates of Education’, ‘Creativity’, ‘Curriculum Development’, ‘Distance Education’, ‘Ecology & Environmental Studies in Education’, ‘Educational Planning and Policy Research’, ‘ET/ICT’, ‘Futurology of Education’, ‘Guidance and Counselling’, ‘Language Education’, ‘Mathematics Education’, ‘Measurement, Assessment and Evaluation’, ‘Organization, Administration and Management’, ‘Philosophy of Education’, ‘Primary Education’, ‘Psychology of Education’, ‘Sociology of Education’, ‘Special

- Education’, ‘Teacher Education’, ‘Value Education’, and ‘Vocational Education’.
- Total 25 Chapters/Categories under Minor areas of the study were, ‘Adult, Continuing & Non Formal Education’, ‘Comparative Education’, ‘Correlates of Education’, ‘Creativity’, ‘Curriculum Development’, ‘Distance Education’, ‘Ecology & Environmental Studies in Education’, ‘Educational Planning and Policy Research’, ‘ET/ICT’, ‘History of Education’, ‘Language Education’, ‘Library Education’, ‘Measurement’, ‘Assessment and Evaluation’, ‘Music Education’, ‘Organization, Administration and Management’, ‘Philosophy of Education’, ‘Population Education’, ‘Psychology of Education’, ‘Science Education’, ‘Sociology of Education’, ‘Special Education’, ‘Teacher Education’, ‘Value Education’, ‘Women Education’, and ‘Mathematics Education’
  - A database of different Component-wise categorization as mentioned in the *Educational Research Information and Review Schedule* viz. Area-wise, Year-wise, Level of Research-wise (Ph.D., M.Phil. and Project), Level of Education-wise (Lower Primary Education, Upper Primary Education, Secondary Education, Higher Secondary Education, and Higher Education), Subject of Research-wise (School and College level subjects), and different component-wise (Basic and Physical information of the Research, Area of Research, Reviewed Literature, Methodology of the research, Type of Research, Sampling technique used, Tools used, Data analysis technique used, Reference styles used and Final Output of the Research) was also prepared using Microsoft Excel (MS-Excel) and International Business Machine—Software for Social Science (IBM-SPSS).
  - The duration of 1964-2014 was classified into five decades viz. 1964-1974, 1975-1984, 1985-1994, 1995-2004, and 2005-2014. And the trends were studied using these.

### **6.12.3 FINDINGS WITH RESPECT TO OBJECTIVE—3**

The objective—3 of the study is, “*To review and identify the Emerging trend of Educational research at the School of Education, Devi Ahilya Vishwavidyalaya Indore with respect to*

- i. Basic information about the Research*
- ii. Physical information of the Research*
- iii. Area of the research*

- iv. *Reviewed Literature*
- v. *Methodology of the research*
- vi. *Type of research*
- vii. *Sampling technique used*
- viii. *Tools used*
- ix. *Data analysis technique used*
- x. *Reference styles used*
- xi. *Final Output of the Research.”*

The component-wise findings are as follows—

### **6.12.3.1 FINDINGS WITH RESPECT TO BASIC INFORMATION ABOUT THE RESEARCH**

The findings with respect to the Basic Information of the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 were as under—

#### **□ Guide ship:**

- There were 24 research Guides/Supervisors and Principal Investigators during the period of 1964-2014 at the School of Education, who had been guided the researchers at different levels of research.
- Dr. B. K. Passi and Dr. D. N. Sansanwal were found to have contributed more by guiding the maximum number of studies at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014. 93 (32.06 percent) studies were guided by both in total.
- Out of a total of 290 studies, Maximum 50 (17.2 percent) research studies were guided by Dr. B. K. Passi, which includes 23 Ph.D., 16 M.Phil. and 11 Research Projects. Following him, 43 (14.8 percent) research studies were guided by Dr. D. N. Sansanwal, which includes 25 Ph.D., 15 M.Phil. and 3 Research projects. 24 (8.3 percent) research studies were guided by Dr. U. S. Choudhari, which includes 10 Ph.D. and 14 M.Phil. studies. 23 (7.9 percent) research studies were guided by Dr. U. C. Vashishtha, which includes 10 Ph.D. and 14 M.Phil. studies.
- Maximum 11 (64.71 percent) Project studies were guided by Dr. B. K. Passi as Principal Investigator.

- Dr. H. R. Pal and Dr. D. N. Sansanwal guided 3 (17.65 percent) project each as Principal Investigator.
- No research projects were undertaken by the rest of the faculty members.

### **Implications:**

- *From the basic information about the research, it is suggested that the Research guides, supervisors of the School of Education should exhaustively explore their own area of the expertise and altogether use their experience to explore the other areas which were left unattended. A balance should be created by them between the innovation and their traditional area.*
- *More faculties should be made available for guiding research.*
- *Faculty should be encouraged to Fetch/ Take-up research projects from the funding agencies.*
- *Mechanism ought to be developed to monitor the Research undertaken by Research Supervisors and Guides.*

### **6.12.3.2 FINDINGS WITH RESPECT TO PHYSICAL INFORMATION OF THE RESEARCH**

The Physical information of the research includes six components viz. Language of the research, Number of the pages used in the research report, Quality of the Paper, Quality of the Binding Work, Prepared Index of the research and Number of Chapters in the research report. The findings with respect to the Physical Information of the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 were as under—

#### **☐ Language of Research Report**

- As far as the Language of the research report was concerned, 81.88 percent Ph.D., 87.1 percent M.Phil and 100 percent project researches used English as the language of reporting.
- Out of a total of 290 researches, 43 (14.83 percent) studies were found reported in the Hindi language and 247 (85.17 percent) were found reported in the English language.
- It was found that most of the researchers prefer the English language as compared to the Hindi Language at all Ph.D., M.Phil. and Project level.

- It was also found that none of the projects were reported in the Hindi Language.

**Implication:** *The majority of the researches were reported in the English language for wider dissemination of research was found to be a good practice. But still, Hindi as a language to report the research should be encouraged. It can be elicited from the above description that, a balance between the research writing languages should be encouraged among researchers. Researchers should be encouraged to write in both languages (English and Hindi) for national and international reach.*

□ **Number of Pages:**

- Out of a total of 290 researches, the maximum 106 (36.55 percent) studies used more than 300 pages for reporting the research.
- Maximum 37.58 percent Ph.D. and 40.32 percent M.Phil. theses were found using more than 300 pages to report.
- Maximum (29.41 percent) research projects used 151-200 pages to report.
- On average, the number of pages to report a Ph.D. research was found to be more than the number of pages to report a M.Phil. or Project researches.
- Further, 66 (22.76 percent) studies were reported in 251-300 pages, 43 (14.83 percent) in 201-250 pages, 52 (17.93 percent) studies in 151-200 pages, 18 (6.21 percent) studies in 101-200 pages, 3 (1.03 percent) studies in 51-100 pages and 2 (0.69 percent) studies in less than 50 pages.

**Implication:** *It can be elicited that, as the level of research was increased the researches was found using more pages in reporting research. Overall, the research at the School of Education, Devi Ahilya Vishwavidyalaya used more than 300 pages for the research report. Thus, it can be concluded that the research becomes voluminous as an increase in the level of the research. But values of parsimony and being prudence can be realized. This can be better left for the researchers and the research guides to rationalize the number of the pages require writing the report especially the qualitative researches. Also, at the same time Language skills should be honed.*

□ **Quality of Paper:**

- Use of the quality paper in reporting the research at Ph.D. and M.Phil. level was found to be of satisfactory level.

- The use of the quality paper in reporting the research at the project level was not found to be of satisfactory level.
- Overall, Out of a total of 290 researches, in majority 123 (42.42 percent) researches quality of paper was found to be Very Bad, and Bad

**Implication:**

- *It can be inferred from the aforesaid that there was a satisfactory level of use of quality paper while reporting the researches but still a great number of 123 studies falls in the Bad and Very Bad category as far as the Quality of the paper used in the reporting the study.*
- *Less Permanence, less smooth, low thickness (low GSM), easily got tear, less Durable, fragile and no standard paper was used, were some of the shortcomings in such studies. Attention to be paid to improve the practice of using quality paper for reporting at all levels of research.*

□ **Binding of Research:**

- As far as the binding quality of the research reports was concerned, Binding quality of the Ph.D., M.Phil. and Project research reports were found not up to of satisfactory level.
- Out of a total of 290 researches (Ph.D., M.Phil. and Project), Binding quality of 18 (6.21 percent) researches were found very good, in 36 (12.41 percent), 100 (34.48 percent), 68 (23.45 percent) and 68 (23.45 percent) researches paper quality was found good, Satisfactory, Bad and Very Bad respectively.
- Poor stitch work, Poor adhesive hard and soft bounds, binding in softbound torn bounds and damaged bindings were few situations were found while reviewing the researches.

**Implication:**

- *It can be concluded from the aforesaid that, there is a need to take serious attention towards the quality of binding work, thesis management system in the library and encouragement for maintenance of researches.*

□ **Index Preparation:**

- Satisfactory levels of Index were prepared in 98 (65.77 percent) Ph.D. researches, in 68 (54.84 percent) M.Phil. Researches and in 3 (17.64 percent) project researches.
- At the Project level, the Index preparation was not found satisfactory.
- Out of a total of 290 researches (Ph.D., M.Phil. and Project), a satisfactory level of Index was prepared in 169 (58.28 percent) researches while in 121 (41.72 percent) researches index were found not satisfactory.
- The general errors while preparing the Index was the Non-Indentation of the tables of Index; Missing page numbers; Mismatch of Page number written and information; Pagination errors; Non-mentioning of the list of Tables and Graphs even though tables and graphs were there in the reports; formatting errors; and Incomplete Index.

**Implication:**

- *Conclusively, considering Index preparation as one of the important features in the research report, adequate attention by the researchers should be given while preparing it.*

□ **Chapterization:**

- As far as the number of the chapter in the researches were concerned, Out of a total of 290 researches (Ph.D., M.Phil. and Project), maximum 156 (53.79 percent) of researches were reported in Five Chapters. It was also found that in 3 (1.03 percent), 72 (24.83 percent), 31 (10.69 percent), 16 (5.52 percent), 3 (1.03 percent) and 2 (0.69 percent) researches were reported in Four, Six, Seven, Eight, Nine and Ten Chapters respectively. 7 (2.41 percent) of the researches was not chapterized.
- 62 (41.61 percent) Ph.D. and 85 (55.86 percent) M.Phil. researches used five chapters to report the research.
- It can be interpreted that the majority (53.79 percent) of the researchers chapterized their researches in 5 Chapters. This could be the formula established in the School of Education, Devi Ahilya Vishwavidyalaya for reporting the educational researches *per se*. These five chapters were named, in general, as (1) Introduction, (2) Review of Related Literature (3)

- Research Methodology (4) Data Analysis and Interpretation (5) Findings Discussion and Summary.
- Further, no uniformity in the number of the chapters reported in the research reports at the different levels of research conducted at the School of Education, Devi Ahilya Vishwavidyalaya has also seen in rest 134 (46.21 percent) researches.
  - A subsequent analysis of the researches shows that more than six chapters found to have from philosophical and case study researches area. While the Five and Six number of chapters were found common in the survey, experimental and descriptive researches.
  - The four numbers of the chapters were also seen in the 2 M.Phil. and 1 Project, in which the last chapter (Findings and Summary) was clubbed with Data Analysis and Interpretation.

**Implication:**

- *The Number of chapters in reporting is quite a decision of the researcher. His/her conscience should be appeal enough to report the research work in a particular number of chapters depending upon the nature of the research and satisfaction of the researcher and reader. But the values of parsimony and being prudent can be realized.*

**6.12.3.3 FINDINGS WITH RESPECT TO AREA OF THE RESEARCH**

Under the Component of Area of research 4 items viz. The major area of the study, Minor Area of the study, Subject of the study and Level of Education at which the study was taken up, were placed in the Educational research Information and Review Schedule.

Each study was allocated one Major area and Minor area as per the nature of the study. Thus, studies were categorized into a total of 22 Chapters/categories under Major area and 25 Chapters/Categories under Minor areas of the study. The findings with respect to Major /Minor area of the research, Level of Education and Subjects undertaken in researches are mentioned in the following sections—

□ **Findings with respect to Major Area of Research:**

As far as the Major Area of research was concerned, at School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014, Out of a total of 290 studies,

- The top four major areas in which the maximum numbers of studies were undertaken were ‘Educational Technology/Information & Communication Technology’, ‘Psychology of Education’, ‘Philosophy of Education’ and ‘Teacher Education’.
- At all levels of research i.e. Ph.D., M.Phil. and Project, the area of ET/ICT was found to be dominating. As a maximum number of researches were carried out in this area at all levels of research.
- The area of Educational Technology/Information & Communication Technology was found to be favorite among the teachers and researchers as out of a total of 290 studies, maximum 124 studies (66 Ph.D., 46 M.Phil. And 12 projects) were undertaken in this area.
- Thirty-seven (12.76 percent) studies were found to be conducted in the major area of ‘Psychology of Education’. This area was the second most popular area of research among teachers and researchers during 1964-2014.
- Twenty-one (7.24 percent) studies were found to be conducted in the major area of ‘Philosophy of Education’. This area was the third most preferable area of research among teachers and researchers during 1964-2014
- Sixteen (5.52 percent) studies each were found to be conducted in the major area of ‘Teacher Education’
- Few studies were conducted in major areas like ‘Educational Planning & Policy Research’ and ‘Primary Education’. ‘Guidance and Counseling’, ‘Language Education’, ‘Special Education’, ‘Value Education’ and ‘Vocational Education’. ‘Distance Education’ and ‘Mathematics Education’.
- The areas like Women Education, Science Education, Population Education, Music Education, Comparative Education, History of Education, Library Education was found to have no attention as no studies were found in these areas.

□ **Findings with respect to Minor Area of Research-Wise Analysis:**

As far as the Minor area of the research was concerned at School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014, Out of the total 290 studies,

- Top four Minor area of research was found to be ‘Teacher Education’, ‘Psychology of education’, ‘Correlates of Education’ and ‘Organization, Administration and Management’.
- Maximum 112 (38.62 percent) studies were conducted in the area of ‘Teacher Education’ which emerges out as the most priority area among Teachers and researchers. In this area 57 Ph.D., 43 M.Phil. and 12 Project studies were conducted.
- With 45 (15.52 percent) studies, ‘Psychology of Education’ was the second most preferred area in which 23 Ph.D., 21 M.Phil. and 1 Project researches were conducted.
- With 23 (7.93 percent) studies, ‘Correlates of Education’ was the third most preferred area in which 11 Ph.D. and 12 M.Phil. studies were conducted.
- Twenty-one (7.24 percent) studies were conducted in the area of ‘Organization, Administration and Management’.
- Few studies were conducted in the Minor areas like ‘Distance Education’, ‘Library Education’, ‘Science Education’, ‘Curriculum Development’, ‘Educational Planning and Policy Research’, ‘Language Education’, ‘Comparative Education’, ‘Ecology & Environmental Studies in Education’, ‘History of Education’, ‘Mathematics Education’, ‘Music Education’, ‘Population Education’, ‘Special Education’ and ‘Women Education’.
- No studies were found in the areas like ‘Primary Education’, ‘Vocational Education’, ‘Guidance & Counseling’ and ‘Futurology of Education’. Therefore no attention was paid to these areas.

**Implications:**

- *The studies were not uniformly conducted among different levels of research cutting across different identified Major/minor areas of the research. The studies were conducted to few areas lopsidedly i.e. few areas dominated and some other areas were deprived of any study. For example, the ‘ET/ICT’ as Major area and ‘Teacher Education’ as Minor area was totally dominated the other areas respectively as far as the Major and Minor area of research was concerned.*
- *Instead of the lopsided expert of an area, Research supervisors/Guides should take note of and encourage researchers to take the diversified area*

*of research so as to create a cosmopolitan outlook in the University teaching department.*

- *The areas like ‘Women Education’, ‘Science Education’, ‘Population Education’, ‘Music Education’, ‘Comparative Education’, ‘History of Education’, ‘Library Education’, ‘Primary Education’, ‘Vocational Education’, ‘Guidance & Counseling’ and ‘Futurology of Education’ in which less number of studies were taken place, should be taken up for further research.*
- *More researches should be taken up in the deprived areas of National Importance and having local weight as mentioned in the National Documents issued by UGC, NCERT, NCTE, and other functionaries.*

□ **Regarding Level of Research:**

- Out of a total of 290 studies, Maximum 142 (48.97 percent) studies were conducted at the Higher Educational level, which includes 67 Ph.D., 65 M.Phil. and 10 Project studies. 108 (37.24 percent) studies were conducted at the Secondary Educational level, which includes 56 Ph.D., 46 M.Phil. and 6 Project studies. 16 (5.52 percent) studies were conducted at the Upper Primary Educational level, which includes 10 Ph.D. and 6 M.Phil. 13 (4.48 percent) studies were conducted at the Lower Primary Educational level, which includes 7 Ph.D., 5 M.Phil. and 1 Project study. 11 (3.79 percent) studies were conducted at the Higher Secondary Educational level, which includes 9 Ph.D. and 2 M.Phil.
- It was found that the Majority of the researches were carried out at the Higher Education and Secondary Education level of Education. While less number of studies were carried out at the Primary (Lower and Upper) and Higher Secondary level of Education.
- Out of a total of 149 Ph.D. studies, maximum at the Higher Education level 67 (44.97 percent) studies, at the Secondary Education level 56 (37.58 percent) studies, at the Upper Primary Education level 10 (6.71 percent) studies, at the Lower Primary Education level 9 (6.04 percent) studies, at Higher Secondary Education level 7 (4.7 percent) studies were conducted.
- Out of the total 124 M.Phil. studies, Maximum at the Higher Education level 65 (52.42 percent) studies, at the Secondary Education level 46 (37.10

- percent) studies were conducted, at the Upper Primary Education level 6 (4.84 percent) studies, at the Higher Secondary Education level 5 (4.03 percent) studies and at the Lower Primary Level 2 (1.61 percent) studies were conducted.
- Out of a total of 17 research projects, Maximum 10 (58.82 percent) studies were conducted at the Higher Education level, 6 (35.29 percent) studies were conducted at the Secondary Education level, 1 (5.88 percent) studies were conducted at the Higher Secondary Education level, No studies were conducted at Lower Primary and Upper Primary Education level.
  - Fewer (Ph.D., M.Phil. and Project) researches were conducted at the Lower Primary, Upper Primary and Upper Secondary levels of education as compared to the Higher education and Secondary Education level.

**Implication:**

- *During 1964-2014, Researchers at School of Education, Devi Ahilya Vishwavidyalaya, Indore were conducted more at the Higher Education and Lower Secondary Education levels.*
- *Fewer researches were conducted at the Lower Primary, Upper Primary and Upper Secondary Levels of education.*
- *Research guides should encourage their students to take research to cut across the various levels of the Education viz. Lower Primary, Upper Primary, Elementary, Secondary, and Higher Education*

**□ Regarding subjects undertaken in Research:**

- In 290 (Ph.D., M.Phil. and Project) researches, a total of 39 school and Higher Education level subjects were identified in which the researches were carried out.
- Out of a total of 149 Ph.D. studies, Maximum 21 (14.09 percent) studies were conducted on ‘Psychology of Education/ Educational Psychology’ as a subject. With 14 (9.4 percent) studies in ‘Value Education’ as a subject makes it the second most explored subject. As subject, ‘ET/ICT’ in 11 (7.38 percent) studies, ‘Educational Administration & Management’ and ‘Science’ in 10 (6.71 percent) studies, ‘Mathematics’ in 8 (5.37 percent) studies, ‘English Language’, ‘Hindi Language’, ‘Social Science’, ‘Teacher Education’ in 7 (4.7 percent) studies each, ‘Chemistry’ in 6 (4.30 percent) studies, ‘Biology’ and ‘Economics’ in 4 (2.68 percent) studies each,

‘Environment Education’, ‘Philosophy of Education’, ‘Primary Education’ and ‘Yoga Education’ in 3 (2.01 percent) studies each, ‘All Primary Subjects’, ‘Computer Education’, ‘Microteaching’, ‘Physics’, ‘Statistics’ in 2 (1.34) studies each were undertaken.

- Subjects like ‘Civics’, ‘Commerce’, ‘Distance Education’, ‘Guidance and Counseling’, ‘Journalism and Mass media’, ‘Music’, ‘Non-Formal Education’, ‘Oriya Language’, ‘Population Education’, ‘Reasoning’, ‘Sociology of Education’, ‘Vocational Education’ and ‘Adult Education’ in 1 ( 0.67 percent) studies each were undertaken, which was found to be the least preferable subject among researchers.
- The subjects viz. ‘Curriculum Development’, ‘Educational Research’, ‘Human Rights’, ‘Library Education’ and ‘Sanskrit Language’ were neglected at the Ph.D. level.
- Out of a total of 124 M.Phil. studies, Maximum 23 (18.55 percent) were carried out in the subject of ‘Psychology of Education/Educational Psychology/Psychology’. 18 (14.52 percent) studies were carried out using the ‘Science’ subject, which makes it the second most explored subject. With 11 (8.87 percent) studies in ‘Value Education’ makes it the third most explored subject. As subject, ‘Social Science’ in 9 (7.26 percent) studies, Philosophy in Education in 8 (6.45 percent) studies, ‘Educational Research’ and Mathematics’ in 7 (5.65 percent) studies each, ‘ET/ICT’ in 5 (4.03percent) studies, ‘English Language’, ‘Hindi Language’ and ‘Educational Administration & Management’ in 4 (3.23 percent) studies each, ‘Curriculum Development’, ‘Environment Education’ in 3 (2.42 percent) studies each; ‘All School Subjects’, ‘Commerce’, ‘Library Education’, ‘Teacher Education’ and ‘Primary Education’ in 2 (1.61 percent) studies; ‘Adult Education’, ‘Biology’, ‘Chemistry’, ‘Civics’, ‘Computer Education’, ‘Human Rights’, ‘Non-Formal Education’, ‘Sanskrit Language’, ‘Sociology of Education’, and ‘Vocational Education’ in 1 (0.81 percent) studies each were conducted. Subjects like ‘Distance Education’, ‘Economics’, ‘Guidance and Counseling’, ‘Journalism and Mass media’, ‘Microteaching’, ‘Music’, ‘Oriya Language’, ‘Physics’, ‘Population Education’, ‘Reasoning’, ‘Statistics’, and ‘Yoga Education’ were neglected subjects at the M.Phil. Level.

- Out of a total of 17 research projects, Maximum 3 (17.65 percent) studies were conducted in ET/ICT', 'Microteaching', 'Teacher Education' and 'Chemistry' subjects each. While only 1(5.88 percent) study each was carried out in the subjects of 'Psychology of Education', 'Educational Research', 'Adult Education', 'Biology' and 'Civics'. Rest all areas were given no attention.
- Out of a total of 290 studies, Maximum 45 (15.52 percent) studies were conducted in the subject of 'Psychology of Education/Educational Psychology/Psychology'. While 'Science' subject was the second most popular subject among researchers, as 26 (8.97 percent) Studies were carried out with this subject. As far as other subjects were concerned, in 'Value Education' 25 (8.62 percent) studies, in 'ET/ICT' 19 (6.55 percent) studies, in 'Social Science' 16 (5.52 percent) studies, in 'Mathematics' 15 (5.17 percent) studies, in 'Educational Administration and Management 13 (4.48 percent) studies, in 'Teacher Education' 12 (4.14 percent) studies, in 'Philosophy of Education', 'English Language' and 'Hindi Language' 11 (3.79 percent) studies each, in 'Educational Research' 8 (2.76 percent) studies, in 'Biology' and 'Environmental Education' 6 (2.07 percent) studies, in Microteaching' and 'Primary Education' 5 (1.72 percent ) studies, 'All school subjects' and 'Economics' 4(1.38 percent) studies, in Adult Education', 'Civic', 'Curriculum Development', 'Commerce', 'Computer Education' and 'Yoga Education' 3 (1.03 percent) studies, in Library Education', 'Non-Formal Education', 'Sociology of Education', 'Vocational Education', 'Physics' and 'Statistics' 2 (0.69 percent) studies each, in 'Human Rights', 'Sanskrit Language', 'Distance Education', 'Guidance and Counselling', 'Journalism and Mass Media', 'Music', 'Oriya Language', 'Population Education' and Reasoning' 1( 0.34 percent) studies were carried out.

**Implication:**

*At the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014,*

- *Diversified School subjects and Teacher education subjects were taken up among the researches.*

- *‘Library Education’, ‘Non-Formal Education’, ‘Sociology of Education’, ‘Vocational Education’, ‘Physics’ and ‘Statistics’, ‘Human Rights’, ‘Sanskrit Language’, ‘Distance Education’, ‘Guidance and Counselling’, ‘Journalism and Mass Media’, ‘Music’, ‘Oriya Language’, ‘Population Education’ and ‘Reasoning’ were the subjects where less number of studies were undertaken, should be taken for further research.*

#### **6.12.3.4 FINDINGS WITH RESPECT TO REVIEW OF THE RELATED LITERATURE**

For this component of Reviewed Literature, five items ‘Number of the Studies Reviewed’, ‘Time span of the Reviewed Studies’, ‘How research gaps identified and explained?’, ‘Is Implication from the previous research rationalized?’ And ‘Overall Comments regarding the Reviewed Literature’ were placed in the *Educational Research Information and Review Schedule*. The findings with respect to the Reviewed Literature in the research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014 were as under—

- **Regarding Number of Studies Reviewed in Review of Related Literature**
  - Out of 149 Ph.D. researches, maximum of 45 (30.2 percent) researches had reviewed 21-50 studies. It was also found that 37 (24.83 percent), 31 (20.81 percent), 23 (15.44 percent), and 3 (2.01 percent) researches had reviewed 1-20 studies, 51-70 studies, 71-100 studies, and more than 200 studies respectively. 101-150 studies and 151-200 studies were reviewed in 5 (3.36 percent) researches each.
  - Out of 124 M.Phil. researches, maximum in 43 (34.68 percent) researches had reviewed 21-50 studies. It was also found that 32 (25.81percent), 33 (26.61 percent), 14 (11.29 percent), and 2 (1.61 percent) researches had reviewed 21-50 studies, 71-100 studies, 71-100 studies, 1-20 Studies, and 100-150 studies respectively. More than 200 studies and 151-200 studies were not reviewed in any of the M.Phil. level research
  - Out of 17 projects, maximum of 1-20 studies were reviewed in 8(47.06 percent) of projects. It was also found that no studies were reviewed in 7

- (41.18 percent) projects. In 2 (11.76 percent) projects 21-50 studies were reviewed.
- Out of a total of 290 researches (Ph.D., M.Phil. and Projects), a maximum of 21-50 studies was reviewed in 79 (27.24 percent) researches. It was also found that 59 (20.34 percent) reviewed 1-20 number of studies, 74 (25.52 percent) reviewed 51-70 number of studies, 7 (2.41 percent) reviewed 101-150 number of studies, 56 (19.31percent) reviewed 71-100 studies and 5 (1.72 percent) reviewed 151-200 number of studies, 3 (1.03 percent) reviewed more than 200 studies. It was also found that 7 (2.41 percent) researches reviewed no studies.
  - At the Ph.D. level, the number of reviewed literature was found satisfactory as far as the number of the review studies were concerned but at M.Phil. and Project level, it needs due consideration.

**Implications:**

- *Considering the importance exhaustive review that helps in framing and implementing the research, the scenario of reviewing literature in terms of the number of the studies, at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 was found to be mixed in nature as far as the different levels of research were concerned.*
- *At the Ph.D. level, the number of reviewed literature was found satisfactory as far as the number of the review studies were concern but at M.Phil. and the Project level it needs due consideration.*
- *Researchers should be encouraged to review the literature not only in good numbers but also in terms of time and varied places.*

□ **Regarding the Span of Reviewed studies in Review of Related Literature**

- Out of 149 Ph.D. researches, maximum 57 (38.26 percent) of the researches reviewed the studies in the time span of 30-40 years, 49 (32.89 percent) researches reviewed the studies in the time span of 20-30 years, 25 (16.78 percent) researches reviewed the studies in the time span of more than 40 years, 18 (12.08 percent) researches reviewed the studies in the time span of 10-20 years. No researches were found in the category of the researches that reviewed the studies in the time span of 1-10 years and reviewed no study at all. Hence, it was clear that in maximum Ph.D. researches, had

reviewed research of over a good span of time 20-40 years and more than 40 years. Thus, the review of related literature was found covering old studies in maximum Ph.D. studies.

- Out of 124 M.Phil. researches, maximum 56 (45.16 percent) of the researches reviewed the studies in the time span of 20-30 years, 15 (12.10 percent) researches reviewed the studies in the time span of 30-40 years, 6 (4.84 percent) researches reviewed the studies in the time span of more than 40 years, 45 (36.29 percent) researches reviewed the studies in the time span of 10-20 years. 2 (1.61 percent) researches were found in the category of the researches that reviewed the studies in the time span of 1-10 years and No researches were found that reviewed no study at all. Hence it was clear that in maximum M.Phil. researches, had reviewed research of over a good span of time between 10-30 years. Thus, the review of related literature was found covering old studies in maximum M.Phil. studies.
- Out of 17 Projects, maximum of 7 (41.18 percent) researches reviewed the studies in the time span of 20-30 years. But at the same time, 7 (41.18 percent) of the researches were found that do not review any studies. 2 (11.76 percent) researches reviewed the studies in the time span of 10-20 years. 1 (5.88 percent) researches were found that reviewed the studies in the time span of 30-40 years and No researches was found that reviewed studies in the time span of 1-10 years and more than 40 years. Hence it was clear that in maximum Project level researches, either had to review research of over the span of time between 10-20 years or not reviews a single study at all.
- Out of a total of 290 (Ph.D., M.Phil. and Projects) researches, maximum 112 (38.62 percent) researches reviewed the studies in the time span of 20-30 years, 73 (25.17 percent) of the researches reviewed the studies in the time span of 30-40 years, 65 (22.41 percent) researches reviewed the studies in the time span of 10-20 years, 31 (10.69 percent) researches reviewed the studies in the time span of more than 40 years. 2 (0.69 percent) of researches were found in the category of the researches that reviewed the studies in the time span of 1-10 years and 7 (2.41 percent) researches reviewed no study at all. Hence, it was clear that in maximum researches, had to review research of over a good span of time 10-40 years.

Thus, the review of related literature was found covering old studies in maximum Ph.D. and M.Phil. researches but not in the Project researches.

**Implications:**

- *It was clear from the above that research at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014, had given adequate attention in reviewing the literature as far as the time span of the reviewed studies was a concern at Ph.D. and M.Phil. level but not at the Project level. But the researches were found with too recent reviewed studies or with too old reviewed studies.*
  
- **Regarding the inclusion of Latest study in Review of Related Literature**
  - Out of 149 Ph.D. researches, in 62 (41.61 percent) researches last five year reviews were incorporated but 87 (58.39 percent) researches did not review the last five years' studies. Hence, in the maximum number of Ph.D. researches latest reviews were not incorporated.
  - Out of 124 M.Phil. researches, in 46 (37.10 percent) researches last five year reviews were incorporated but in 78 (62.9 percent) researches last five years studies were not reviewed. Hence, in the maximum number of M.Phil. researches latest reviews were not incorporated
  - Out of 17 Project researches, in only 6 (17.65 percent) researches last five year reviews were incorporated but in 11 (82.35 percent) researches last five years studies were not reviewed. Hence, in the maximum number of Projects researches the latest reviews were not incorporated.
  - Out of 290 researches, in 114 (39.31 percent) researches, last five year reviews were incorporated but in 176 (60.69 percent) researches last five years studies were not reviewed.
  - Hence, in the maximum number of researches at all levels of research the latest reviews were not incorporated.

**Implication:**

- *Hence, there was a lack of reporting/reviewing the latest studies at all levels of research at the School of Education, Devi Ahilya University, Indore during 1964-2014.*

- *Researchers should be encouraged to review latest as well as old studies*
- *Adequate training and monitoring in the area of review of related literature should be made.*

□ **Regarding Identification and Explanation of Research Gaps**

- Out of 149 Ph.D. researches, in 56 (37.58 percent) researches Identification and Explanation of Research gaps were done of a satisfactory level. It was also found that Identification and Explanation of Research gaps were done, ‘Good’ in 31 (20.81 percent) researches, ‘Very Good’ in 12 (8.05 percent) researches, ‘Bad’ in 26 (17.45 percent) researches, ‘Very Bad’ in 19 (12.75 percent) researches. Identification and Explanation of Research gaps were not done in 5 (3.36) percent of researches. Thus, considering the overall situation, Identification and Explanation of research gaps were found to be of ‘Satisfactory’ level as far as the researches at the Ph.D. level are concerned.
- Out of 124 M.Phil. Researches, in maximum 56 (37.58 percent) researches Identification and Explanation of Research gaps were done of ‘Bad’ level. It was also found that Identification and Explanation of Research gaps were done, ‘Good’ in 31 (20.81 percent) researches, ‘Very Good’ in 3 (2.42 percent) researches, ‘Very Bad’ in 23 (18.55 percent) researches and were not done in 11 (8.87 percent) researches. Thus, considering the overall situation, Identification and Explanation of Research gaps were found to be not up to the satisfactory level as far as the M.Phil. researches are concerned.
- Out of 17 Project researches, in maximum 4 (23.53 percent) researches Identification and Explanation of Research gaps were done of ‘Satisfactory’ level. It was also found that Identification and Explanation of Research gaps were done, ‘Very Bad’ in 2 (11.76 percent) researches and were not done in 11 (64.71 percent) researches. Thus, considering the overall situation, Identification and Explanation of Research gaps were not up to the ‘Satisfactory’ level as far as Project researches are concerned.
- Out of total 290 researches, in maximum 92 (31.72 percent) researches Identification and Explanation of Research gaps were done of ‘Satisfactory’ level. It was also found that Identification and Explanation of Research

gaps were done, 'Bad' in 69 (23.79 percent) researches, 'Very Bad' in 44 (15.17 percent) researches, 'Good' in 43 (14.83 percent) researches, 'Very Good' in 15 (5.17 percent) researches, and were not done in 27 (9.31 percent) researches

- Considering the above, it is evident that Identification and Explanation of Research gaps were found to be satisfactory at the Ph.D. level but not up to a satisfactory level as far as the M.Phil. and Project researches. Overall, the situation of Identification and Explanation of Research gaps, in 150 (51.72 percent) was satisfactory, and in 140 (48.28 percent) not up to the satisfactory level as far as all researchers are a concern.

**Implication:**

- *Therefore, a need for more attention was realized for the component of Identification and Explanation of research gaps at all levels of research.*
- **Regarding Rationalization of implications from previous researches**
  - Out of 149 Ph.D. researches, Rationalization of Implication from the previous Researches was found at 'satisfactory' level in 70 (46.98 percent) researches and was found 'not satisfactory' in 54 (36.24 percent) researches. Although there were 25 (16.78 percent) studies where the Rationalization of Implication from the previous researches was not done even though the previous researches were written.
  - Out of 124 M.Phil. researches, Rationalization of Implication from the previous Researches was found at 'satisfactory' level in 24 (19.15 percent) researches and was found 'not satisfactory' in 57 (45.97 percent) researches. Although there were 43 (34.68 percent) studies where the Rationalization of Implication from the previous researches was not done even though the previous researches were written.
  - Out of 17 Projects, the Rationalization of Implication from the previous Researches was found at 'not satisfactory' level in 4 (23.53 percent) researches and was found 'satisfactory' in 2 (11.76 percent) projects. Although there were 11 (64.71 percent) studies where the Rationalization of Implication from the previous researches was not done even though the previous researches were written.

- Out of Total 290 (Ph.D., M.Phil. and Projects) researches, the Rationalization of Implication from the previous Researches was found at ‘not satisfactory’ level in 115 (39.66 percent) researches and was found ‘satisfactory’ in 96 (33.10 percent) projects. Although there were 79 (27.24 percent) studies where the Rationalization of Implication from the previous Researches was not done even though the previous researches were written.

**Implication:**

- *Concluding the aforesaid, for the component of Rationalization of Implications from the previous researches, Ph.D. researches was in a good position in rationalizing implication from previous researches, while the situation was found to be paying some attention in the area of Rationalization of Implications from the previous researches in M.Phil. and Project researches because only 33.1 percent of research was found in the category of satisfactory. Overall, the scenario was found that some attention is needed to write properly for the Rationalization of Implications from the previous researches.*
- *At the same time, skills related to make implications from the reviewed literature, Identification and Explanation of the research gaps and to rationalize for the research in hand should be taught. Proper orientation should be provided to them. The practice of writing Implications from the review of related literature should be realized.*

□ **Overall comments on Review of Related Literature—**

- Out of 149 Ph.D. researches, the overall Review of Related Literature was found ‘Satisfactory’ in 54 (36.24 percent) researches. While the overall review of related literature scenario was found ‘Good’ in 34 (22.82 percent) researches, was found ‘Very Good’ in 16 (10.74 percent) researches, found ‘Bad’ in 25 (16.78 percent) researches, and ‘Very Bad’ in 20 (13.42 percent) research. Thus, the overall scenario of Review of Related Literature at Ph.D. level was found to be of ‘Satisfactory’ level as 69.8 percent of researches was found to be of ‘Satisfactory’ and more than ‘Satisfactory’ level.
- Out of 124 M.Phil. researches, overall Review of Related Literature was found ‘Satisfactory’ in 31 (25 percent) researches. While the overall review

- of related literature scenario was found 'Good' in 22 (17.74 percent) researches, was found 'Very Good' in 4 (3.23 percent) researches, found 'Bad' in 42 (33.87 percent) researches, and 'Very Bad' in 25 (20.16 percent) research. In 11 (8.87 percent) researches review of related literature was not done properly. Thus, the overall scenario of the review of related literature at M.Phil. level researches were found to be of not up to 'Satisfactory' level, as only 45.97 percent researches were found to be of satisfactory and above level.
- Out of 17 Projects, the overall Review of Related Literature was found 'Satisfactory' in only 2 (11.76 percent) researches. While the overall review of the related literature scenario was found 'Good' in 11 (8.87 percent) researches, was found 'Bad' in 3 (17.65percent) researches, 'Very Bad' in 1 (5.88 percent) research. In 11 (64.71 percent) researches review of related literature was not done properly. Thus, the overall scenario of the review of related literature at the Project level researches was found to be of not up to 'Satisfactory' level, as only 11.76 percent researches were found to be of 'Satisfactory' level as far as overall comments regarding review of related literature were concerned.
  - Out of total 290 (Ph.D., M.Phil. and Project) researches, overall Review of Related Literature was found 'Satisfactory' in 87 (30 percent) researches. While the overall review of related literature scenario was found 'Good' in 45 (15.52 percent) researches, was found 'Very Good' in 15 (5.17 percent) researches, found 'Bad' in 70 (24.14 percent) researches, and 'Very Bad' in 46 (15.86 percent) research. In 27 (9.31 percent) researches review of related literature was not done properly. Thus, the overall scenario of Review of Related Literature in researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore was found to be of not up to 'Satisfactory' level, as only a total of 56.21 percent researches were found to be of 'Satisfactory' or above level. But still, some attention was needed to be given to strengthen the Rationalization of Implications from the previous researches.
  - From the analysis the Review of the Related Literature, it is evident that the errors like Latest studies were not reviewed; Studies were not in chronological order; studies were not referenced properly; only

departmental studies were reviewed; Implications were not drawn; Research Gaps are not identified; Mismatch between rationale and Review of related literature; Proper referencing style was not used; in-text citations missing; incomplete review; language and Grammatical Errors were there; Foreign studies were not reviewed; Number was given to the studies; Findings were not found in some studies; Abstracts not written properly; Some reviewed studies were in Hindi while some in English; Separate heads were not used in some studies; and only a Few studies were reviewed; dominates the researches which lead to the dissatisfactory level of the Review of the Related Literature. These errors were found in the majority of the researches at all levels of research

**Implication:**

- *Thus, the overall scenario of Review of Related Literature in researches at School of Education, Devi Ahilya Vishwavidyalaya, was found to be of satisfactory level as total 56.21 percent researches were found to be of satisfactory or above level. But still, some attention was needed to be given to strengthening the Rationalization of Implications from the previous researches.*
- *Adequate training and monitoring in the area of review of related literature should be made. The skill of paraphrasing, Abstract making, Note-taking, and Note making should be practiced by the researchers*
- *The researchers should be encouraged and provided with the proper orientation for presenting the review of related literature in a uniform and comprehensive way.*

**6.12.3.5 FINDINGS WITH RESPECT TO METHODOLOGY OF THE RESEARCH**

For the component of Methodology of Research five items viz. ‘Kind of Research (Basic/Pure, Applied, or Action), ‘Kind of Research (Quantitative, Qualitative, or Mixed)’, ‘Explanation of the terms was there?’, ‘Operationalization of the terms was there?’ and ‘type of Hypothesis’ was placed in the *Educational Research Information and Review Schedule*. The findings with respect to the Methodology of the research in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 were as under—

□ **Regarding Kind of research:**

- Out of 149 Ph.D. researches, 129 (86.45 percent) researches were found to be of Fundamental kind, while 17 (11.41 percent) of researches were found to be of Applied type and rest 3 (2.01 percent) of researches were of Action type.
- Out of 124 M.Phil. researches, 109 (87.9 percent) researches were found to be of Fundamental kind, while 12 (9.68 percent) of researches were found to be of Applied type and rest 3 (2.42 percent) of researches were of Action type.
- Out of 17 Project researches, 4 (23.53 percent) researches were found to be of Fundamental kind, while 11 (64.71 percent) of researches were found to be of Applied type and rest 2 (11.76 percent) of researches were of Action type.
- Out of 290 (Ph.D., M.Phil. and Project) researches, 242 (83.45 percent) researches were found to be of Fundamental kind, while 40 (13.79) percent of researches were found to be of Applied type and rest 8 (2.76 percent) of researches were of Action type.
- From the trend of research with respect to the Level of research and Kind of research, it was found that, at each level of the research, Basic research Methodology was found to be dominating the Applied and Action research methodology throughout the years during 1964-2014.
- The trend of research with respect to the kind of research clearly indicates that the Basic type of research was found to be dominating Applied and Actions methodological research throughout the years during 1964-2014.

**Implication:**

- *Overall the scenario of Basic/ Pure research was found satisfactory but the action research, as kind of research, was totally neglected at research at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014.*
- *Action research should be encouraged. Although the place of Pure and Applied researches cannot be neglected.*

□ **Regarding Kind of Research based on Qualitative, Quantitative and Mixed Methods**

Out of 149 Ph.D. researches, 134 (89.93 percent) researches were of Quantitative Nature, 11 (7.38 percent) researches were of Qualitative nature and rest 4 (2.68) uses the Mixed Methodology.

- Out of 124 M.Phil. researches, 99 (79.84 percent) researches were of Quantitative Nature, 19 (15.32 percent) researches were of Qualitative nature and the remaining 6 (4.84) uses the Mixed Methodology.
- Out of 17 Project Researches, 16 (94.12 percent) researches was of Quantitative Nature, 1 (5.88 percent) research was of Qualitative nature and no researchers were found uses the Mixed Methodology.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, 249 (85.86 percent) researches were of Quantitative Nature, 31 (10.69 percent) were of Qualitative nature and the remaining 10 (3.45) uses the Mixed Methodology.
- From the trend of research with respect to the Level of research and Nature of research, it was found that at each level of the research, Quantitative research methods were found dominating the Qualitative and Mixed methodologies research, throughout the years during 1964-2014.
- The trend of research with respect to the Nature of research, clearly, indicates that the Qualitative research Methodology was found to be dominating Qualitative and Mixed methodological research throughout the years during 1964-2014.

**Implication:**

- *Overall, Mixed and Qualitative method research was found giving less weightage or say neglected. While Quantitative method of Research was found popular among researchers & teachers and dominated the research at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014 as compared to the qualitative and mixed research.*
- *Apart from the Quantitative research, the other types of research like Qualitative and mixed Methods should be made available for the student researchers.*

□ **Regarding Explanation and Operationalization of the term**

- Out of 149 Ph.D. researches, the Explanation of the terms was written in all 149 (100 percent) researches but the Operationalization of the terms was found in only 132 (88.59 percent studies) and found missing in 17 (11.41 percent) researches.
- Out of 124 M.Phil. researches, Explanation of the terms were written in all 124 (100 percent) researches but the Operationalization of the terms was found in only 90 (72.58 percent studies) and found missing in 34 (27.42 percent) researches.
- Out of 17 Project Researches, Explanation of the terms was written in all 17 (100 percent) researches but the Operationalization of the terms was found in only 12 (70.59 percent studies) and found missing in 5 (24.41 percent) researches.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, the Explanation of the terms was written in all 290 (100 percent) researches but Operationalization of the terms was found in only 234 (80.69 percent studies) and found missing in 56 (19.31 percent) researches.
- From the trend of research with respect to the Explanation of the terms in research at each level of the research, it is evident that this component was consistently got placed throughout the years during 1964-2014. But, from the trend of research with respect to the Operationalization of the terms in research was concerned, it was found that at each level of the research this component was consistently being losing its place throughout the years during 1964-2014.

**Implications:**

- *Overall, Explanation of the Terms was found in all (100 percent) researches but the Operationalization of Terms was found missing in 56 (19.31 percent) at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014.*
- *There is a need to train the researchers to write the Operationalization of the terms that are used in their research.*

□ **Regarding Hypothesis (es) in Research**

- Out of 149 Ph.D. researches, it was found that the Null Hypothesis(es) were formulated in the 60 (40.27 percent) researches, in 72 (48.32 percent) researchers both Null and Alternative) hypothesis(es) were formulated, in 17 (11.41 percent) researches no Hypothesis of any sort was formulated. There was not a single study in which only alternative Hypothesis was formulated.
- Out of 124 M.Phil. researches, it was found that the Null Hypothesis(es) were formulated in the 68 (54.84 percent) researches, in 42 (33.87 percent) researchers both Null and Alternative) hypothesis(es) were formulated, in 14 (11.29 percent) researches no Hypothesis of any sort was formulated. There was not a single study in which only alternative Hypothesis was formulated.
- Out of 17 Project Researches, it was found that the Null Hypothesis(es) were formulated in the 8 (47.06 percent) researches, in 6 (35.29 percent) researchers both Null and Alternative) hypothesis(es) were formulated, in 3 (17.65 percent) researches no Hypothesis of any sort was formulated.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, it was found that the Null Hypothesis(es) were formulated in the 136 (46.9 percent) researches, in 120 (41.38 percent) researchers both Null and Alternative) hypothesis(es) were formulated, in 34 (11.72 percent) researches no Hypothesis of any sort was formulated.
- There was not a single Ph.D., M.Phil or Project study in which was carried out using alternative Hypothesis only.

**Implication:**

- *Formation of the Hypotheses of Null type was found dominated the other types of the hypotheses formation in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014*
- *This lead to the conclusion of the dominant use of statistical techniques over the qualitative research analysis techniques in the researches at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014.*
- *It can also be concluded the preference to null hypotheses was given while the risk of taking alternative or both was lower among researchers of the School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014.*

### 6.12.3.6 FINDINGS WITH RESPECT TO METHOD OF RESEARCH

For the component of Method of Research, two items, 'The type of research' and 'Experimental Design used' was placed in the *Educational Research Information and Review Schedule* (Appendix—B). the findings with respect to the Method of research used are as follows—

#### □ **Regarding Method of Research**

- Out of 149 Ph.D. researches, maximum 99 (66.44 percent) researches used Experimental method in their studies, 23 (15.44 percent) researches used Survey method, 11 (7.38 percent) researchers used Philosophical Method, 7 (4.07 percent) researches used Explorative method, 4 (2.68 percent) researches used Descriptive Method, 3 (2.01 percent) researches used Diagnostic Research method, 1 (0.67 percent) researches used Comparative Method and Case Study Method each.
- No Ph.D. study was conducted using the Correlation Method.
- Out of 124 M.Phil. researches, maximum 50 (40.32 percent) researches used Experimental method in their studies, 38 (30.65 percent) researches used Survey method, 13 (10.48 percent) researchers used Philosophical Method, 10 (8.06 percent) researches used Explorative method, 7 (5.65 percent) researches used Descriptive Method, 2 (1.61 percent) researches used Diagnostic Methods and Correlation Methods each, 1 (0.81 percent) researches used Comparative Method and Case study method each.
- Out of 17 projects researches, maximum 11 (64.71 percent) researches used the Experimental method in their studies, 5 (29.41 percent) researches used Survey method, and 1 (5.88 percent) researches used the Case study method.
- No projects were undertaken using Comparative Method, Diagnostic Method, Descriptive Method, Correlation Method, Explorative Method and Philosophical Methods contemporary to time 1964-2014.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, maximum 160 (55.17 percent) researches used Experimental method in their studies, 66 (22.76 percent) researches used Survey method, 24 (8.28 percent) researchers used Philosophical Method, 17 (8.06 percent) researches used Explorative method, 11 (3.79 percent) researches used Descriptive Method, 5 (1.72 percent) researches used Diagnostic Methods, 3 (1.03 percent)

researches Case Study Method each and 2 (0.69 percent) Correlation Method and Comparative Method each.

- The trend of the researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014 with respect to Method of Research shows that
  - In every decade, most numbers of researches were conducted using the ‘Experimental method’. And this trend was found consistent throughout 1964-2014. This makes the ‘Experimental research method’ as one of the favorites among researchers and teachers at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.
  - The second most explored method of research was found to be the ‘Survey method’ during 1964-2014.
  - The third most popular method of research was found to be the ‘Philosophical method’ during 1964-2014.

**Implication:**

- *The scenario of the method of research used in researches at the School of Education, Devi Ahilya Vishwavidyalaya, was found not diversified.*
- *Only Experimental, Survey, and Philosophical types of researches methods were preferred mostly. While Other types of research methods like Action Research, Historical Research, Diagnostic Study, Ex-post facto Research, Exploratory Research, and Correlational Method, were used either in meager numbers or given less attention.*
- *It can be elicited that a one-sided approach in terms of the type of research was used. The situation at all levels of research was found to be not diversified in terms of the method of the research was taken up, due to the adoption of lop-sided/ domination of few methods of research only.*

□ **Research design used in research**

- Out of total 290 researches, 160 (55.17 percent) researches was carried out under Experimental Research or using Experimental Designs.
- Thus, in 130 (44.83 percent) researches, Experimental designs were not applied/ used.

- Out of 149 Ph.D. researches, Experimental designs were utilized in 99 (63.77 percent) researches. Out of these 99 researches, optimally Quasi-Experimental Designs were used in 51 (34.23 percent) researches, Pre-Experimental Design being used in 43 (28.86 percent) researches and in the remaining 5 (3.36 percent) researches True Experimental Research Design was used.
- Out of 124 M.Phil. researches, Experimental designs were utilized in 56 (45.16 percent) researches. Out of these 56 researches, optimally Quasi-Experimental Designs were used in 34 (27.42 percent) researches, Pre-Experimental Design being used in 12 (9.68 percent) researches and in the remaining 4 (3.23 percent) researches True Experimental Research Design was used.
- Out of 17 Project Researches, Experimental designs were utilized in 11 (64.71 percent) researches. Out of these 11 researches, optimally Quasi-Experimental Designs were used in 7 (41.18 percent) researches; Pre-Experimental Design and True-Experimental Design were used in 2 (11.76 percent) researches each.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, Experimental designs were utilized in 160 (55.17 percent) researches. Out of these 160 researches, optimally Quasi-Experimental Designs were used in 92 (31.72 percent) researches, Pre-Experimental Design being used in 57 (19.66 percent) researches and in the remaining 11 (3.79 percent) researches True-Experimental Research Design was used.
- In 130 (44.83 percent) researches, Experimental designs were not applicable/ used.
- During 1964-2014, from the trend of researches with respect to Kind of Experimental Design used in the researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore, it was found that
  - Major chunk i.e. 55.17 percent of total researches was carried with an Experimental research method.
  - Quasi-Experimental Design dominated all levels of research.
  - Out of many Experimental Designs, in all decades 1975-1984, 1985-1994, and 1995-2004 Quasi-Experimental Design dominated among all Experimental Designs except 2005-2014.

- With Pre-Experimental Design, maximum of 25 researches were carried out at the Ph.D. level during 2005-14.
- With Quasi-Experimental Design, maximum of 25 researches were carried out at M.Phil. level during 1985-1994.
- With True-Experimental Design, maximum of 3 researches were carried out at M.Phil. level during 1985-1994.

**Implications:**

- *Thus, it can be deduced from the above elaborations that Experimental Method was in abundance used in the Educational Research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014. Researchers should be encouraged to take up researches apart from Experimental researches.*
- *Further, Quasi-Experimental Design found dominating design among all Experimental Designs. In the later years during 2004-2014, Pre-Experimental designs were found getting popular too. Researchers can be encouraged to take up Pre and True Experimental designs in their researches so as to justify among different types of design.*
- *The researchers should be encouraged to take up researches with diversified sort and Kind of research designs so as to have a variety of researches as far as sort of experimental designs were concerned.*

**□ Regarding Sort of Research Design**

- Out of a total of 290 (Ph.D., M.Phil. and Project) researches, 160 researches were carried out using Experimental Methods.
- According to the ‘Kind of Experimental Research designs’ in these 160 researches, 57 researches were carried out using Pre-Experimental designs, 92 researches were carried out using Quasi-Experimental Designs, and in remaining 11 researches were carried out using True-Experimental Designs.
- Out of a total of 57 Pre-Experimental Design Studies, maximum 44 (15.17 percent) researches were conducted using ‘Pre-test, Post-test Single Group Design’, and the remaining 13 (4.48 percent) researches were carried out using ‘Post-test Single Group Design’.

- Out of a total of 96 Quasi-Experimental Design studies, ‘Post-test only Non-Equivalent Group Design’ was used in 23 (7.93 percent) researches, ‘Pre-test Post-test Non-Equivalent Group Design’ was used in 54 (18.62 percent) researches, ‘Parallel Time-series design’ was used in 4 (1.38 percent) researches, and ‘Factorial Group Design’ was used in 11 (3.79 percent) researches.
- Out of 11 True-Experimental Research design studies, maximum ‘Pre-test Post-test Equivalent group design’ and ‘Post-test only Equivalent Group Design’ was used in 5 (1.72 percent) researches each and ‘Randomized Solomon-Four-Group Design’ was used in 1 (0.34 percent) researches.
- Out of 149 Ph.D. researches, 50 (33.56 percent) researches were not experimental design studies. In remaining 99 (66.44 percent) experimental designed studies, maximally ‘Pre-test, Post-test Single Group design’ and ‘Pre-test Post-test Non-Equivalent Group design’ was used maximally in 34 (22.82 percent) researches each, ‘Post-test only Non-Equivalent Group design’ was used in 10 (6.71 percent) researches, ‘Post-test Single Group design’ was used in 9 (6.04 percent) researches, ‘Factorial Group design’ was used in 4 (2.68 percent) researches, ‘Parallel Time-series Design’ and ‘Pre-test Post-test Equivalent Group Design’ was used in 3 (2.01 percent) researches each, ‘Post-test only Equivalent Group Design’ and ‘Randomized Solomon Four-Group Design’ was used in 1 (0.67 percent) researches each.
- Out of 124 M.Phil. researches, 74 (59.68 percent) researchers were not experimental designed studies. In remaining 46 (40.32 percent) researches, maximally ‘Pre-test Post-test Non-Equivalent Group design’ used in 16 (12.9 percent) researches, ‘Post-test only Non-Equivalent Group Design’ was used in 10 (8.06 percent) researches, ‘Pre-test Post-test Single Group Design’ was used in 8 ( 6.45 percent) researches, ‘Factorial Group Design’ was used in 7 (6.65 percent) researches , ‘Post-test Single Group design’ was used in 4 (3.23 percent) researches, ‘Pre-test Post-test Equivalent group design’ & ‘Post-test only Equivalent Group design’ was used in 2 (1.61 percent) researches each, and ‘Parallel Time-series design’ was used in 1 (0.81 percent) researches only. ‘Randomized Solomon-Four-Group design’ was not used in any M.Phil. research.

- Out of 17 project studies, 6 (35.29 percent) researchers were not experimental designed studies. In remaining 11 (64.71 percent) researches, maximally 'Pre-test Post-test Non-Equivalent Group design' used in 4 (23.53 percent) researches, 'Post-test only Non-Equivalent Group design' was used in 3 (17.65 percent) researches, 'Pre-test Post-test Single Group design' and 'Post-test only Equivalent Group design' was used in 2 (11.76 percent) researches each. 'Post-test Single Group design', 'Parallel Time-series design', 'Factorial Group design' and 'Pre-test Post-test Equivalent group' was and 'Randomized Solomon-Four-Group design' was used not used in any Project studies.
- Out of a total of 290 (Ph.D., M.Phil. and Project) researches, in 130 (44.83 percent) researchers were not experimental designed studies. In remaining 160 (55.17 percent) researches, maximally 'Pre-test Post-test Non-Equivalent Group design' used in 54 (18.62 percent) researches, 'Pre-test, Post-test Single Group design' was used in 44 (15.17 percent) researches, 'Post-test only Non-Equivalent Group design' was used in 23 (7.93 percent) researches, 'Post-test Single Group design' was used in 13 (4.48 percent) researches, 'Factorial Group design' was used in 11 (3.79 percent) researches, 'Post-test only Equivalent group' and 'Pre-test Post-test Equivalent Group design' was used in 5 (1.72 percent) researches each and 'Parallel Time series' was used in 4 (1.38 percent) researches and 'Randomized Solomon-Four-Group' was used in 1 (0.34 percent) research only.
- As far as the Experimental designs were concerned, 'Pre-test, Post-test Single Group design' and 'Pre-test Post-test Non-Equivalent Group design' dominated the at the Ph.D. level of research.
- As far as the Experimental designs were concerned, 'Pre-test Post-test Non-Equivalent Group design' and 'Post-test only Non-Equivalent Group Design' were found dominated at the M.Phil. level.
- As far as the Experimental designs were concerned, 'Pre-test Post-test Non-Equivalent Group design' was found dominated at the Project level.
- In Educational Researches during 1964-2014, at School of Education, Devi Ahilya Vishwavidyalaya, Indore, it was clear that

- ‘Post-test Single Group design’ was used maximally in 6 Ph.D. researches during 1985-1994.
- ‘Pre-test, Post-test Single Group design’ was used maximally in 25 Ph.D. researches during 2004-2014.
- ‘Post-test only Non-Equivalent Group’ was used maximally in 9 M.Phil. researches during 1985-1994
- ‘Pre-test Post-test Non-Equivalent Group design’ was used maximally in 11 Ph.D. and M.Phil. researches each during 1985-1994 and 1995-2004 respectively.
- ‘Parallel Time-series design’ was used maximally in 2 Ph.D. researches during 1985-1994
- ‘Factorial Group design’ was used maximally in 5 M.Phil. researches during 1985-1994.
- ‘Pre-test Post-test Equivalent group design’ was used maximally in 2 Ph.D. researches during 2005-2014.
- ‘Post-test only Equivalent Group design’ was used maximally in 2 Project and M.Phil. researches during 1975-84 and 1985-1994 respectively.
- Randomized Solomon-Four-Group was used only in 1 Ph.D. research during 1985-1994.

**Implications:**

- *It was clear from the above that Researches at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014 had not balanced as far as the scenario of sort of experimental designs was concerned. The ‘Pre-test Post-test Non-Equivalent Group’ dominated the rest of the research designs in the Experimental sort of studies.*
- *The researchers should be encouraged to take up researches with diversified sorts of research designs so as to have a variety of researches as far as sort of experimental designs were concerned.*

**6.12.3.7 FINDINGS WITH RESPECT TO SAMPLING TECHNIQUE USED**

For this component of sampling technique used in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014, Three items viz. Geographical Region covered in the Sample’, ‘Size of the

sample’, and ‘Sampling techniques’, were placed up in the *Educational Research Information and Review Tool* (Appendix—B). The findings with respect to the Sampling Techniques used in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 were as under—

□ **Regarding Geographical Region covered in the sample**

- Out of 149 Ph.D. researches, maximum 124 (83.22 percent) researches were carried out using sample from the geographical region of ‘Within Indore’, 7 (4.7 percent) researches used to sample from the geographical region of ‘Within Madhya Pradesh but outside Indore’, 4 (2.68 percent) researches were having the sample from the geographical region of ‘Within India but Outside Madhya Pradesh’ and only one (0.67 percent) researches were undertaken with the sample from the geographical region of ‘Outside India’. There were also 13 (8.72 percent) researches in which the sample was ‘Not applicable’ as far as the geographical region was concerned due to the Philosophical /Descriptive nature of the studies.
- Out of 124 M.Phil. researches, Maximum 85 (68.55 percent) researchers were carried out using sample from the geographical region of ‘Within Indore’, 8 (6.45 percent) researches used to sample from the geographical region of ‘Within Madhya Pradesh but outside Indore’, 16 (12.90 percent) researches were having sample from the geographical region of ‘Within India but Outside Madhya Pradesh’ and no research was undertaken with sample from the geographical region of ‘Outside India’. There were also 15 (12.10 percent) researches in which the sample was ‘Not applicable’ as far as the geographical region was concerned due to the Philosophical /Descriptive nature of the studies.
- Out of 17 Project Researches, Maximum 14 (82.35 percent) researchers were carried out using sample from the geographical region of ‘Within Indore’, 1 (5.88 percent) researches used sample from the geographical region of ‘Within Madhya Pradesh but outside Indore’ and 2 (11.76 percent) researches were having sample from the geographical region of ‘Within India but Outside Madhya Pradesh’, No research was undertaken with sample from the geographical region of ‘Outside India’. Also, there

- was no research in which the sample was 'Not applicable' as far as the geographical region was concerned.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, maximum 223 (76.9 percent) researchers were carried out using sample from the geographical region of 'Within Indore', 16 (5.52 percent) researches used to sample from the geographical region of 'Within Madhya Pradesh but outside Indore', 22 (7.59 percent) researches were having sample from the geographical region of 'Within India but Outside Madhya Pradesh' and One (0.34 percent) research was undertaken with sample from the geographical region of 'Outside India'. There were also 28 (9.66 percent) researches in which the sample was 'Not applicable' as far as the geographical region was concerned due to the Philosophical /Descriptive nature of the studies.
  - The trend of the researches with respect to the jurisdiction of the sample clearly indicated that—
    - in all decades 1964-1974, 1975-1984, 1985-1994, 1995-2004 and 2005-2014, there was a consistent dominance of taking geographical region 'Indore' as the sample.
    - From the above, it is evident that maximum researchers at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014 preferred Geographical regions of the sample as Indore at all levels of research.
    - In other geographical regions mentioned earlier apart from 'Indore' meager researches were carried out.
    - Only one study was found with the sample of the International level which indicates the departments' inability to fetch foreign students or conduct research in foreign countries.

**Implications:**

- *The implication can be drawn from the analysis of this component that Mentors and Researchers should be encouraged to take diversify geographical areas to cut across the national level research outcome.*
- *Also, some mechanism should be employed for attracting foreign students for research.*

□ **Regarding Size of the sample**

- Out of 149 Ph.D. researches, maximum 49 (39.52 percent) studies were used a sample size of ' $\geq 51$  but  $\leq 100$ ', 48 (32.21 percent) researches used a sample of size ' $\geq 101$  but  $\leq 200$ ', 12 (8.05 percent) researches used a sample of size ' $\leq 31$  but  $\leq 50$ ', 29 (19.46) percent of researches used a sample of size ' $> 200$ ', 3 (2.01 percent) researches used sample size of ' $\geq 6$  but  $\leq 30$ ' and no researches used sample of size ' $\leq 5$ '. While there were 12 (8.05 percent) researches not used a specific number of sample size due to the Philosophical and Explorative nature of the study.
- Out of 124 M.Phil. researches, maximum 49 (39.52 percent) studies were used a sample size of ' $\geq 51$  but  $\leq 100$ ', 18 (14.52 percent) researches used a sample of size ' $\geq 101$  but  $\leq 200$ ', 29 (23.39 percent) researches used a sample of size ' $\leq 31$  but  $\leq 50$ ', 3 (2.42) percent of researches used a sample of size ' $> 200$ ', 6 (4.84 percent) researches used sample size of ' $\geq 6$  but  $\leq 30$ ' and 1 (0.81 percent) researches used sample of size ' $\leq 5$ '. While there were 18 (14.52 percent) researches not used a specific number of sample size due to the Philosophical and Explorative nature of the study.
- Out of 17 Project Researches, maximum 8 (47.06 percent) studies were used a sample size of ' $\geq 31$  but  $\leq 50$ ', no researches used a sample of size ' $\geq 101$  but  $\leq 200$ ', 2 (11.76 percent) of researches used a sample of size ' $> 200$ ', 4 (23.53 percent) researches used sample size of ' $\geq 6$  but  $\leq 30$ ' and 1 (5.88 percent) researches used sample of size ' $\leq 5$ '.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, maximum 96 (33.10 percent) studies were used a sample size of ' $\geq 51$  but  $\leq 100$ ', 66 (percent) researches used a sample of size ' $\geq 101$  but  $\leq 200$ ', 49 (23.53 percent) researches used a sample of size ' $\leq 31$  but  $\leq 50$ ', 34 (11.72 percent) of researches used a sample of size ' $> 200$ ', 13 (4.48 percent) researches used sample size of ' $\geq 6$  but  $\leq 30$ ' and 2 (0.69 percent) researches used sample of size ' $\leq 5$ '. While there were 30 (10.34 percent) researches not used a specific number of sample size due to the Philosophical and Explorative nature of the study.
- From the trend of the researches with respect to the Sample Size, at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014, it was found clear that

- In the decades 1985-1994, 1995-2004 and 2005-2014, there was a consistent dominance of taking ‘ $\geq 51$  but  $\leq 100$ ’ and *Size*  $\geq 101$  but  $\leq 200$  size of the sample.
- The sample size of ‘ $\geq 101$  but  $\leq 200$ ’ and ‘ $> 200$ ’ had more prevailed at Ph.D. level researches.
- The sample size of ‘ $\geq 51$  but  $\leq 100$ ’ and ‘ $\geq 101$  but  $\leq 200$ ’ had more prevailed at M.Phil. researches.
- The sample size of ‘ $\geq 31$  but  $\leq 50$ ’ had more prevailed at Project level researches.
- Overall, the Sample size of ‘ $\geq 51$  but  $\leq 100$ ’, ‘ $\geq 101$  but  $\leq 200$ ’ were more popular among the researchers as far as the whole scenario of research was concerned.

**Implication:**

- *From the above it was found that the situation of researches as far as the sample sizes taken in the researches at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014 was concerned, a balanced distribution was found among the use of sample sizes. The researchers were found using small and large samples depending upon the nature and level of researches.*

**□ Regarding sampling Techniques**

- Out of a total of 290 (Ph.D., M.Phil. and Project) researches, in Maximum 166 (57.24 percent) researches Probabilistic sampling technique was used, while in 54 (18.62 percent) researches Non-probabilistic sampling Techniques was used and in the rest 70 (24.14 percent) researches both the Non-Probabilistic and Probabilistic sampling was in voyage.
- From the trend of the researches with respect to the Sampling Technique, at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014, it was found clear that
  - in most of the decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014, there was a consistent dominance of taking Probabilistic Sampling techniques for the research. This may be to a large number of the Experimental researches being taken up out during the period 1975-2014.

- During the decade 2005-14, both types of Sampling techniques were surpassed the only usage of Non-Probabilistic sampling techniques.

**Implications:**

- *Probabilistic sampling techniques have dominated the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore.*
  - *Looking into the nature of Education as a field, Small sample researches using Non Probabilistic sampling could be encouraged among researchers.*
  - *The appropriate size of the sample and appropriate & varied sampling techniques both from the Probabilistic Sampling techniques and Non-probabilistic Sampling techniques should be encouraged among the researches.*
- **Regarding the use of sampling techniques**
- Out of 149 Ph.D. researches, in Maximum 87 (58.39 percent) researches Probabilistic sampling techniques were used, while in 25 (16.78 percent) researches non-probabilistic sampling Techniques were used and in the rest 37 (24.83 percent) researches both the Non-Probabilistic and Probabilistic sampling techniques were used.
  - Out of 124 M.Phil. researches, in Maximum 65 (52.42 percent) researches Probabilistic sampling techniques were used, while in 26 (20.97 percent) researches Non-Probabilistic sampling Techniques were used and in rest 33 (26.61percent) researches both the Non-Probabilistic and Probabilistic sampling techniques were used.
  - Out of 17 Project Researches, in Maximum 14 (57.24 percent) research projects Probabilistic sampling techniques were used and in rest 3 (17.65 percent) researches Non-Probabilistic sampling Techniques were used.
  - Thus, at the Ph.D. and M.Phil. level of research both the Non-Probabilistic and Probabilistic sampling techniques were used. But at the project level, Probabilistic sampling techniques were mostly used.
  - Out of total 290 (Ph.D., M.Phil. and Project) researches, in Maximum 166 (57.24 percent) researches Probabilistic sampling techniques were used, while in 54 (18.62 percent) researches Non-Probabilistic sampling

- Techniques was used and in the rest 70 (24.14 percent) researches both the Non-Probabilistic and Probabilistic sampling was used.
- Overall, Probabilistic sampling techniques were found dominating the research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.
- **Regarding the use of different types/sort of Probabilistic and Non Probabilistic sampling techniques**
- In 149 Ph.D. researches, 186 tallies were marked, which shows in maximum 110 (59.14 percent) researches Simple random technique was utilized. In 58 (31.18) researches Purposive Sampling techniques were used, in 8 (4.3 percent) researches Stratified Random sampling was used, in 5 (2.69 percent) researches Multi-Stage Sampling was used, in 2 (1.08 percent) researches Deviant Case sampling was utilized and in 1 (0.54 percent) researches each utilized Cluster Sampling, Convenient sampling, and Modal Instance sampling techniques.
  - In 124 M.Phil. researches, a total of 159 tallies were marked, which shows in maximum 76 (47.8 percent) researches Simple random technique was utilized. In 49 (30.82 percent) researches Purposive Sampling techniques were used, in 17 (10.69 percent) researches Stratified Random sampling was used, in 10 (6.29 percent) researches Convenient Sampling was used, in 5 (3.14 percent) researches Multi-Stage sampling was utilized and in 1 (0.63 percent) researches each utilized Cluster Sampling and Expert Sampling techniques. Modal Instance and Deviant Case sampling were not utilized in M.Phil. researches.
  - In 17 Project Researches, a maximum 14 (82.35 percent) researches Simple random technique was utilized. In 3 (17.65 percent) researches Purposive Sampling techniques were used. Stratified Random sampling, Convenient Sampling, Multi-Stage Sampling, Cluster Sampling, Expert Sampling, Modal Instance, and Deviant Case sampling was not utilized in Project researches which were in a voyage in other types of researches.
  - Out of total 290 (Ph.D., M.Phil. and Project) researches, a total of 362 tallies were marked, which shows in maximum 200 (55.25 percent) researches Simple random technique was utilized. In 110 (30.39 percent)

researches Purposive Sampling techniques were used, in 25 (6.91 percent) researches Stratified Random sampling was used, in 11 (3.04 percent) researches Convenient Sampling was used, in 10 (2.76 percent) researches Multi-Stage sampling was utilized and in 2 (0.55 percent) researches each utilized Cluster Sampling and Deviant Case Sampling techniques. In one (0.28 percent) researches Modal Instance and Expert Sampling technique was utilized.

- From trend analysis of the researches with respect to the use of different types of Probabilistic and Non Probabilistic sampling techniques, it is evident that
- Out of total 290 (Ph.D., M.Phil. and Project) researches, a total of 362 tallies were marked for how many times the Probabilistic and Non Probabilistic sampling techniques were utilized. Out of these 362 tallies, 65.47 percent times the Probabilistic sampling technique was used. While in rest 34.53 percent times researchers preferred to use Non Probabilistic sampling technique.
- In all decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014, among different types of Probabilistic sampling techniques, the Simple Random Sampling technique consistently dominated the researches.
- In all decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014, among different types of the Non Probabilistic sampling techniques, the Purposive Sampling technique consistently dominated the researches.
- Overall, Purposive sampling technique and Simple Random Sampling dominated the sampling technique area in the research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.
- The rest of the sampling techniques was meagerly attended viz. Cluster Sampling Technique and Systematic Random Sampling techniques in the Probabilistic sampling Techniques & Snowball Sampling technique, Accidental/Haphazard, Modal Instance sampling, Expert Sampling, Quota Sampling, Heterogeneity or Diversity sampling in the Non- Probabilistic sampling Techniques was exhaustively not been taken up by any research.

**Implications:**

- *No doubt the type of sampling procedure/techniques depends upon the nature of research but still, A need was felt, to pay balanced attention,*

- towards the use of the different types of Sampling Techniques at the School of Education, Devi Ahilya Vishwavidyalaya, Indore.
- *Probabilistic Sampling techniques like Stratified Random Sampling Technique, Systematic Random Sampling Technique, Cluster Sampling Technique, Multi-Stage Sampling Technique & Non probabilistic Sampling techniques like Snowball Sampling technique, Accidental/Haphazard, Modal Instance sampling, Expert Sampling, Quota Sampling, Heterogeneity or Diversity sampling which was not exhaustively taken up should be oriented to the students and continuous encouragement should be given to the students to try their hands in these mere theoretical terms into practical reality.*

#### **6.12.3.8 FINDINGS WITH RESPECT TO TOOLS USED**

For this component of ‘Tools Used’ in the Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014, three items viz. ‘Nature of the Tool’, Type of the tool’ and ‘Number of tools’ were placed in the Educational Research Information and Review Schedule (Appendix—B). The findings with respect to the Tools Used in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 were as under—

- **Nature of Tools used**
  - Out of 149 Ph.D. researches, in maximum 71 (47.65 percent) researches both standardized and Non-standardized tools were utilized. In 53 (35.57 percent) researches preferred Non-standardized tools only, 14 (9.4 percent) researchers preferred Standardized tools only. Also in 11(7.38 percent) researches no tools were utilized due to the Philosophical nature of the study.
  - Out of 124 M.Phil. researches, in maximum 47 (37.9 percent) researches preferred non-standardized tools only. In 46 (37.1 percent) researches both standardized and Non-standardized tools were utilized, 21 (16.94 percent) researchers preferred Standardized tools only. Also in 10 (8.06 percent) researches no tools were utilized due to the Philosophical nature of the studies.
  - Out of 17 Project Researches, in maximum 8 (47.06 percent) researches both standardized and Non-standardized tools were utilized. In 7 (41.18

percent) researches preferred non-standardized tools only, 2 (11.76 percent) researchers preferred Standardized tools only.

- Out of total 290 (Ph.D., M.Phil. and Project) researches, in maximum 125 (43.1 percent) researches both standardized and Non-standardized tools were utilized. In 107 (36.9 percent) researches preferred non-standardized tools only, 37 (12.76 percent) researchers preferred Standardized tools only. Also in 21(7.24 percent) researches no tools were utilized due to the Philosophical nature of the study.
- Both Standardized and Non-standardized tools were found used simultaneously at all levels of researches.
- Further analysis of the tool used in the researches at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014 shows
  - Out of the total 290 researches, 42.20 percent of researches was found using Self-Made tools. Especially in most of the Experimental design study, Diagnostic study and Survey study the researcher uses a variety of standardized tools but at the same time the Criterion Reference tests in Experimental Studies, Diagnostic tests in Diagnostic studies and questionnaires/Interview schedules in Survey research were prepared by the researcher him/herself.
  - In decades 1975-1984, 1985-1994 and 1995-2004 more use of the Non-Standardized test was dominating. In the decade 2005-2014, both standardized and Non-standardized tests were used.
  - Thus, the Standardize and Self-Made tools dominated the tools used by the researchers at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.

**Implications:**

- *The use of standardized tests enables the researcher to pick up the tool out of many available ones. Such tools were used by the School of Education's researchers generally used in the Correlates of education and Experimental Researches.*
- *At the same time, the researchers had prepared the Criterion Test of their own in such researches.*
- *In almost all survey researches the School of Education's researchers used the self-made tool.*

- *The age-old debate of Standardized tool versus tailor-made tool (self Made) will dominate the future research too. Both have their own arguments over one another for their supremacy. But a balanced picture of the use of Standardize and Non-standardize tools bit inclined to the earlier one were seen in the researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.*
- *Tailor/Self-made tools should be given some importance to the standardized one.*
- *Standardized tests, Test batteries, and inventories could be used with caution. Too old tools could be used after establishing the norms in contemporary times.*
- *Likert type Reaction scales were found to dominate in each and every experimental research could be replaced by some other type of tool.*

□ **Regarding Number of tools used**

- Out of 149 Ph.D. researches, Maximum three number of tools used in 31 (20.81 percent) researches, Four number of tools were used in 29 (19.46 percent) researches, Five number of tools were used in 23 (15.44 percent) researches, Seven number of tools were used in 13 (8.72 percent) researches, Eight number of tools were used in 12 ( 8.05 percent) researches, Two number of tools were used in 10 (6.71 percent) researches, Six number of tools were used in 9 (6.04 percent) researches, Ten number of tools were used in 5 (3.36 percent) researches and Nine number of tools were used in 3 (2.01 percent) researches, One number of tools were used in 2 (1.34 percent) researches. Eleven and Thirteen number of tools were used in 1 (0.67 percent) researches each. There were 10 (6.71 percent) researches where the number of tools cannot be quantified due to the use of Philosophical methods. As in these researches, the researchers were using the Philosophical reasoning and thought process as a technique, rather than any concrete tools.
- Out of 124 M.Phil. Researches, Maximum three number of tools used in 35 (28.23 percent) researches, Four number of tools were used in 28 (22.58 percent) researches, Two number of tools were used in 27 (21.77 percent) researches, Five number of tools were used in 9 (7.26 percent) researches,

One number of tools were used in 7 (5.65 percent) researches, Six number of tools were used in 5 (4.03 percent) researches. Seven and Eight numbers of tools were used in 1 (0.81 percent) researches. There were 11(8.87 percent) researches, where the number of tools cannot be quantified due to the use of Philosophical methods. As in these researches, the researchers were using Philosophical reasoning and thought the process as a tool rather than any concrete tools.

- Out of 124 M.Phil. Researches, Maximum three number of tools used in 35 (28.23 percent) researches, Four number of tools were used in 28 (22.58 percent) researches, Two number of tools were used in 27 (21.77 percent) researches, Five number of tools were used in 9 (7.26 percent) researches, One number of tools were used in 7 (5.65 percent) researches, Six number of tools were used in 5 (4.03 percent) researches. Seven and Eight numbers of tools were used in 1 (0.81 percent) researches. There were 11(8.87 percent) researches, where the number of tools cannot be quantified due to the use of Philosophical methods. As in these researches, the researchers were using the Philosophical reasoning and thought process as a technique, rather than any concrete tools.
- Out of 17 Research Projects, Maximum two numbers of tools were used in 6 (35.29 percent) researches, Three and Eight number of tools were used in 3 (17.65 percent) researches, Four number of tools were used in 2 (11.76 percent) researches, only One tool was used in 2 (11.76 percent) researches and Seven number of tools were used in 1 (5.88 percent) researches.
- Out of 290 (149 Ph.D., 124 M.Phil. and 17 Research Projects) researches, maximum Three numbers of tools were used in 69 (23.79 percent) researches, Four numbers of tools were used in 59 (20.34 percent) researches, Two numbers of tools were used in 43 (14.83 percent) researches, Five numbers of tools were used in 32 (11.03 percent) researches, Eight numbers of tools were used in 16 (5.52 percent) researches, Seven numbers of tools were used in 15 (5.17 percent) researches, Six numbers of tools were used in 14 (4.83 percent) researches, One number of tools were used in 11(3.79 percent) researches, Ten numbers of tools were used in 5 (1.72 percent) researches, Nine numbers of tools were used in 3 (1.03 percent) researches, Eleven and Thirteen

numbers of tools were used in 1 (0.34 percent) researches each. There were 21 (7.24 percent) researches, where the number of tools cannot be quantified due to the use of Philosophical methods. As in these researches, the researchers were using the Philosophical reasoning and thought process as technique, rather than any concrete tools.

- From the Trends of the tools used in researches at School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014, it was found clear that,
  - Maximum 13 numbers of tools were used in a Ph.D. Research Geed (2001). Also at the same time, 11 was the second-highest number of tools used in the Ph.D. research Sharma (2010).
  - Also at the same time, 8 was the second-highest number of tools used in the M.Phil. Research Singh (1988).
  - Eight is the maximum number of tools used in three projects entitled “A study of teaching competency of secondary school teaching (NCERT sponsored) by *B. K. Passi, S. K Sharma, 1981*”, “Effectiveness of strategy of teaching in models of teaching in terms of understanding, reaction and willingness of teacher educators (sponsored by NCERT. New Delhi Phase I)” by *B. K. Passi, L. C. Singh, d. N. Sansanwal, 1986* and “Implementing training strategy and studying effectiveness of different variation in components of a training strategy for CAM/ITM in terms of understanding, competence, reactions and willingness of students teachers” sponsored by NCERT, New Delhi (Phase II) by *B.K. Passi, L.C. Singh, D.N. Sansanwal, 1986*.
  - Maximum three numbers of tools were used by researchers more often during 1964-2014.
  - There were 21 (7.24 percent) researches, where the number of tools cannot be quantified due to the use of Philosophical methods. As in these researches, the researchers were using Philosophical reasoning and thought the process as a tool rather than any concrete tools.
  - The trend shows that the numbers of tools per research were increased as the decades during 1964-2014 were progressed.

**Implication:**

- *Overall Picture of the researches shows that during 1964-2014 there was a substantial increase in the number of the tools per research. It was also found that as time progressed during 1964-2014, the number of tools used per Ph.D. was greater than the number of tools used per M.Phil. or Number of tools per Project. One can elicit that the number of tools was increased as the level of research was increased.*
- *The number of tools implies the quality of research is debatable yet not provable.*

□ **Regarding Type of tool used**

Out of the total 1139 different frequencies of tools, 11 categories of the tools used in altogether (149 Ph.D., 120 M.Phil. and 17 Projects)) Researches.

- Out of the 698 tallies marked therein 149 Ph.D. researches for ‘type of tools used’, Maximum Test-Batteries/Inventories were used 121(17.34 percent) times , Reaction scale/Opinionaire were used 114 (16.33 percent) times, Achievement test/CRT/NRT was used 104 (14.9 percent) times , Observation Schedules/ Checklist was used 96 (13.75 percent) times, Questionnaire/Information Schedule was used 85 (12.18 percent) times, Scales (Aptitude /Attitude) were used 61( 8.74 percent) times, Interview/Personal Interactions/Discussions were used 43 (6.16 percent) times, Projective/Non Projective was used 32 (4.58 percent) times, Others (Philosophical/ Records/textbooks/ ) were used 28 (4.01 percent) times and the least Diagnostic tests were used 14 (2.01 percent) times.
- Out of the 379 tallies marked in 124 M.Phil. researches for ‘type of tools used’, Maximum Test Batteries/Inventories were used 91 (24.01percent), Reaction scale/Opinionaire were used 59 (15.57 percent) times, Achievement test/CRT/NRT was used 54 (14.25 percent) times, Questionnaire/Information Schedule was used 45 (11.87 percent) times, Observation Schedules/ Checklist was used 39 (10.29 percent) times, Scales (Aptitude /Attitude) were used 36 (9.5 percent) times, Interview/Personal Interactions/Discussions were used 18 (4.75 percent) times, Projective/Non Projective was used 16 (4.22 percent) times, Others (Philosophical/ Records/textbooks) were used 12 ( 3.17 percent) times, Diagnostic test were used 9 (2.37 percent) times.

- Out of the 62 tallies marked in 17 M.Phil. researches for ‘type of tools used’ Achievement test/CRT/NRT were used 12 (19.35 percent) times, Others (Philosophical/ Records/textbooks/ ) were used 10 ( 16.13 percent) times, Observation Schedules/ Checklist was used 9 (14.52 percent) times, Test Batteries/Inventories were used 8 (12.9 percent) times, Reaction scale/Opinionaire were used 8 (12.9 percent) times, Interview/Personal Interactions/Discussions were used 6 (9.68 percent) times, Questionnaire/Information Schedule were used 5 (8.06 percent) times, Scales (Aptitude /Attitude) were used 4 (6.45 percent) times, Diagnostic test and Projective/Non Projective were not used at all.
- Out of the 1139 tallies marked in 290 (Ph.D., M.Phil. and Project) researches for ‘type of tools used’, Maximum Test Batteries/Inventories were used 220 (19.32 percent) times, Reaction scale/Opinionaire were used 181 (15.89 percent) times, Achievement test/CRT/NRT was used 170 (14.93 percent) times, Observation Schedules/ Checklist was used 144 (12.64 percent) times, Questionnaire/Information Schedule were used 135 (11.85 percent) times, Scales (Aptitude /Attitude) were used 101 (8.87 percent) times, Interview/Personal Interactions/Discussions were used 67 (5.88 percent) times, Others (Philosophical/ Records/textbooks) were used 50 (4.39 percent) times, Projective/Non Projective were used 48 (4.21 percent) times, and in the least Diagnostic test was used 23 (2.02 percent) times.

**Implications:**

- *Overall, Maximum standardized Test Batteries/Inventories tools dominated the researches at School of Education, Devi Ahilya Vishwavidyalaya, as compared to the different types of tools.*
- *Also, reaction scale and achievement tests were found second favorite tools among the student researches.*
- *Whereas Projective/Non-Projective techniques/tools and Diagnostic tests were used in fewer numbers.*
- *Thus, all other types of tools were also found meager attention in the Research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.*

- *Too much old tools were found in use which should be updated in terms of the Norms and Standards.*

#### **6.12.3.9 FINDINGS WITH RESPECT TO DATA ANALYSIS TECHNIQUE USED**

For this component of the Data Analysis technique used in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014, three items viz. ‘Kind of Statistical techniques used’, ‘Sort of parametric and Non-parametric techniques used’ and ‘Qualitative techniques used’ were accommodated in the *Educational Research Information and Review Tool* (Appendix—B). The findings with respect to Data Analysis techniques used at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 are mentioned in the following sections.

##### **□ Regarding Kind of Data Analysis techniques used**

- Out of 149 Ph.D. researches, maximum Parametric statistical techniques were used in 100 (67.11 percent) researches, Both parametric and Non-parametric statistics were used in 25 (16.78 percent) researches, and only Non-parametric statistics were used in 3 (2.01 percent) researches. None/Other types of techniques were used in 21 (14.09 percent) researches.
- Out of 124 M.Phil. Ph.D. researches, maximum Parametric statistical techniques were used in 81 (65.32 percent) researches, Both parametric and Non-parametric statistics were used in 21 (16.94 percent) researches, None/Other types of techniques were used in 18 (14.52 percent) researches and only Non Parametric statistics were used in 4 (3.23 percent) researches.
- Out of 17 Projects, maximum Parametric statistical techniques were used in 6 (35.29 percent) researches, Both parametric and Non-parametric statistics were used in 5 (29.41 percent) researches, None/Other 6 (35.29 percent) researches and Non Parametric statistics was not used in Projects.
- Out of 290 (Ph.D., M.Phil. and Projects), maximum Parametric statistical techniques were used in 187 (64.48 percent) researches, Both parametric and Non parametric statistics were used in 51 (17.59 percent) researches, None/Other 45 (15.52 percent) researches and only Non Parametric statistics were used in 7 (2.41 percent) researches.

- The trend of the researches with respect to the 'Use of Statistical Techniques' indicates that
  - In all decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014 Parametric statistical techniques were found dominating the statistical analysis domain.
  - In all decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014 Non-parametric Statistical techniques were not exploited properly.
  - In Philosophical and descriptive studies some other sorts of inferential techniques were used up which falls in the category of Qualitative research techniques. These studies were 15.52 percent of total researches.

**Implication:**

- *Parametric statistics dominated the data analysis techniques among the researches*
- *Descriptive statistics were used by almost all the researchers.*
- *A variety of Inferential data analysis techniques were used in the researchers at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.*

□ **Regarding the type/Sort of Statistical technique used**

- For 149 Ph.D. researches, 468 tallies were marked for the use of the kind of Statistical techniques. Out of these 468 tallies, 376 (80.34 percent) tallies were marked under the Parametric statistical techniques and 92 (19.66 percent) tallies were marked for under Non-Parametric statistical techniques. It was found clear that in 105 (22.44 percent) researches t-test (independent/Dependent) were used, in 98 (20.94 percent) researches ANOVA was used, in 68 (14.53 percent) researches ANCOVA was used, in 5 (1.07 percent) researches MANOVA was used, in 2 (0.43 percent) researches VARIMAX Rotation was used, in 98 (20.94 percent) researches Pearson 'r' was used. In the remaining 92 (19.66 percent) tallies Non-parametric statistical techniques were used. It was found clear that Chi-Square test was used in 78 (16.67 percent) researches , Kruskal-Wallis 'H' test was used in 8 (1.71 percent) researches, Mann Whitney 'U' test was

used in 4 (0.85 percent) researches, and Wilcoxon test was used in 2 (0.43 percent) researches.

- For 124 M.Phil. researches, 360 tallies were marked for the use of the kind of Statistical techniques. Out of these 360 tallies, 288 (80 percent) tallies were marked under the parametric statistical techniques and 72 (20 percent) tallies were marked for under Non-Parametric statistical techniques. It is evident that — in 91 (25.28 percent) researches t-test (independent/Dependent) were used, in 64 (17.78 percent) researches ANOVA was used, in 48 (13.33 percent) researches ANCOVA was used, in 1 (0.28 percent) researches MANOVA was used, in 3 (0.83 percent) researches VARIMAX Rotation was used, in 81 (22.50 percent) researches Pearson ‘r’ was used. In the remaining 72 (20 percent) tallies Non-parametric statistical techniques were used. It was found clear that the Chi-Square test was used in 64 (17.78 percent) researches, Kruskal-Wallis ‘H’ and Mann Whitney ‘U’ test were used in 3 (0.83 percent) researches each, and Wilcoxon test was used in 2 (0.56 percent) researches.
- For 17 Projects, 32 tallies were marked for the use of the kind of Statistical techniques. Out of these 32 tallies, 24 (75 percent) tallies were marked under the Parametric statistical techniques and 8 (25 percent) tallies were marked for under Non-Parametric statistical techniques. It is evident that — in 8 (25 percent) researches t-test (independent/Dependent) were used, in 4 (12.5 percent) researches ANOVA was used, in 3 (9.38 percent) researches ANCOVA was used, in 2 (6.25 percent) researches VARIMAX Rotation was used, in 7 (21.88 percent) researches Pearson ‘r’ was used. In the remaining 8 (25 percent) tallies Non-parametric statistical techniques were used. It was found clear that the Chi-Square test was used in 7 (21.88 percent) researches and Mann Whitney ‘U’ test was used in 1 (3.13 percent) researches.
- For total 290 (Ph.D., M.Phil. and Project) researches, 860 tallies were marked for the use of the kind of Statistical techniques. Out of these 360 tallies, 688 (80 percent) tallies were marked under the parametric statistical techniques and 172 (20 percent) tallies were marked for under Non-Parametric statistical techniques. It is evident that — in 204 (23.72 percent) researches t-test (independent/Dependent) were used, in 166 (19.30

percent) researches ANOVA was used, in 119 (13.84 percent) researches ANCOVA was used, in 6 (0.7 percent) researches MANOVA was used, in 7 (0.83 percent) researches VARIMAX Rotation was used, in 186 (22.50 percent) researches Pearson 'r' was used. In the remaining 172 (20 percent) tallies Non-parametric statistical techniques were used. It was found clear that Chi-Square test was used in 149 (17.33 percent) researches, Kruskal-Wallis 'H' test was used in 11 (1.28 percent) researches, Mann Whitney 'U' test was used in 8 (0.93 percent) researches and Wilcoxon test was used in 4 (0.47 percent) researches.

- From the trend of the researches with respect to the 'Use of Statistical Techniques' indicates that
  - In all decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014 Parametric statistical techniques were found dominating the statistical analysis domain
  - In all decades 1975-1984, 1985-1994, 1995-2004 and 2005-2014 Non-parametric Statistical techniques were not exploited properly
  - the t-test (dependent and Independent) was found to be the most exploited technique among Parametric statistical techniques
  - Chi-Square test was found to be the most exploited technique among all other Non-Parametric statistical techniques

**Implications:**

- *Overall it can be elicited easily that Parametric statistical techniques for making inferences were used abundantly and less attention was paid for to use Non-Parametric statistics in the researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.*
- *One can easily elicit that parametric statistics was dominating the Area of Analysis in research.*
- *From the previous description, it was concluded that in Parametric statistical techniques like t-Test, Pearson 'r', ANOVA and ANCOVA dominates the tests used in the Research at School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014. While meager or less attention was given to Non-parametric statistical techniques like Kruskal Wallis H, McNemar, Kolmogorov Smirnov Z and Runs Test, Kruskal-Wallis one-way analysis of variance by ranks, Friedman two-way analysis of*

*variance by ranks, Siegel–Tukey test, Spearman's rank correlation coefficient, Wald–Wolfowitz runs test.*

- *Mostly in educational situations, the assumptions of the parametric statistics are rarely met. Also at the same time, the assumptions of the parametric statistics were not being checked by the researchers due to the lack of statistical knowledge and competency. The advent of statistical packages like SPSS, AMOS, R, etc gives an edge to check the same. The orientation in workshop mode can be organized in the area of Parametric and Non-parametric statistics for the better analysis of data for the novice researchers.*
- *Researches having the scope of higher qualitative parametric statistics techniques like the regression analysis, MANOVA, factor analysis, etc. should be carried forward.*

□ **Regarding Use of Qualitative data Analysis techniques**

- Vote/Frequency Count and Percentage as techniques of the Analysis was used in every Quantitative and Qualitative research.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, 249 (85.86 percent) researches were of Quantitative Nature, 31 (10.69 percent) were of Qualitative nature and the remaining 10 (3.45) uses the Mixed Methodology.
- Out of 149 Ph.D. researches, 60 researches were used the Qualitative Analysis in their research. It is evident that, maximum, Content Analysis was used in 53 (88.33 percent) Researches, Philosophical Analysis was used in 4 (6.67 percent) researches, Logico-Philosophical Analysis was used in 2 (3.33 percent) Researches, Indo-Deductive Analysis was used in 1 (1.67 percent) Researches.
- Out of 124 M.Phil. Researches, 75 researches were used in the Qualitative research Analysis. Maximum Content Analysis was used in 64 (85.33 percent) researches, Logico-Philosophical Analysis was used in 3 (4 percent) researches, Philosophical Analysis was used in 2 (2.67 percent) researches, Indo-Deductive Analysis was used in 2 (2.67 percent) researches, Descriptive Analysis was used in 2(2.67 percent) researches,

- Historico-Philosophical Analysis and Emperico-Philosophical Analysis was used in 1 (1.33 percent) researches each.
- Out of 17 Projects, 6 researches were used Qualitative research Analysis. All such researches were used ‘Content Analysis’ as a data analysis technique.
  - Out of a total of 290 researches, 141 researches used the Qualitative research Analysis techniques. Content Analysis was used in 123 (87.23 percent) researches, Philosophical Analysis was used in 6 (4.26 percent) researches, Logico-Philosophical Analysis was used in 5 (3.55 percent) researches, Indo-Deductive Analysis was used in 3 (2.13 percent) researches, Descriptive Analysis was used in 2 (1.42 percent) researches, Historico-Philosophical Analysis and Emperico-Philosophical Analysis was used in 1 (0.71 percent) researches.
  - During 1964-2014, the trend of researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, with respect to the Qualitative Data Analysis technique used in Research clearly shows that
    - Content analysis as a technique of Analyzing data was used in all Case Study researches, Comparative Studies, Diagnostic Research, Descriptive Research, Explorative Research, and Philosophical Research and in some of Survey Researches. This technique was also used in some Experimental researches.
    - Some of the novel analytical techniques viz. Historico-Philosophical Analysis, Emperico-Philosophical Analysis, and Logico-Philosophical Analysis were also in a voyage at the School of Education, Devi Ahilya Vishwavidyalaya, Indore.
    - Logico-Philosophical Analysis as a technique was used in M.Phil. researches by Sahoo (1986) entitled “An Analytical Study of the Educational Principles implicit in Sarvodaya Philosophy”, by Sahoo (1987) entitled “An Analytical Study of the Economic Principles implicit in Sarvodaya Philosophy” and by Rath (1987) entitled “A Philosophical Analysis of Value-Education”.
    - Logico-Philosophical Analysis as a technique was used In Ph.D. research entitled “Mechanistic and Prganisamic viewpoints in Biology and their trace in Education” by Vashishtha (1986) and in

“The Concept of Life In Modern Biology and Indian Philosophy and Its Implications In the Curriculum of Secondary Schools” by Garg (1990).

- The historico-philosophical method was used in M.Phil. research by Mishra (1989) entitled “A Philosophical study of the Educational status of women in Vedic period”.
- Emperico-Philosophical Analysis was used in M.Phil. The research entitled “Relevance of Secondary Education for the Rural people-in depth study of an interior village” by Acharaya (1988).

**Implications:**

- *Overall, major Qualitative Data Analysis techniques like Triangulation, Inductive Analysis, Deductive Analysis, Data Displaying, and Creative Synthesis were not used at any level of Research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.*
- *Some of the novel analytical techniques viz. Historico-Philosophical Analysis, Emperico-Philosophical Analysis, and Logico-Philosophical Analysis were also in a voyage at the School of Education, Devi Ahilya Vishwavidyalaya, Indore.*
- *The meager amount of researches was conducted in pure Qualitative area or using qualitative Analytical techniques.*
- *The qualitative data analysis techniques should be properly oriented and practically demonstrated to the young researchers. In the name of the Qualitative research Techniques the researches were found using the Content analysis, percentage, frequency count, graphing, pyramid chart analysis, etc. should be thought for alternatives. An orientation for the different areas of research like qualitative research methods and methodology, Analysis in qualitative research, etc could be started to increase the diversity in research methods.*

**6.12.3.10 FINDINGS WITH RESPECT TO REFERENCE STYLES USED**

For this component of ‘Reference Style used/followed’, in the research at the School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014, four head items were placed in the Educational Research Information and Review Tool (Appendix—B). These four head items related to *Reference style*,

*Footnotes/Endnotes, and Legibility and proper make of tables & graphs in the Research.* The findings with respect to the 'Reference Style Used' in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014, are as under—

□ **Regarding Style of Reference Used**

- Out of 149 Ph.D. researches, Mixed (APA & MLA) style was used in 61 (40.94 percent) researches, APA style was used in 42 (28.19 percent) researches, No Specific style was used in 38 (25.5 percent) researches and MLA style was used in 8 (5.37 percent) researches.
- Out of 124 M.Phil. researches, Mixed (APA & MLA) style was used in 49 (39.52 percent) researches, No Specific style was found in 46 (37.1 percent), APA style was used in 25 (20.16 percent) researches and MLA style was used 4 (3.23 percent) researches.
- Out of 17 Project Researches, Mixed style was used in 7(41.18 percent) researches, No Specific style was found in 6 (35.29 percent) researches, APA style and MLA style were used in 2 (11.76 percent) researches each.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, Mixed (APA and MLA) style was used in 116 (40 percent) researches, No Specific style was used in 91 (31.38 percent) researches, APA style was used in 69 (23.79 percent) researches and MLA style was used in 14 (4.83 percent) researches.
- During 1964-2014, from the trend of researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore, it was found that
  - During 1964-2004 there was a Mixed (APA and MLA) style of referencing dominating the style of referencing in researches.
  - Use of APA style of referencing gradually increased in from 1964-2014 in researches.
  - During the last decade i.e. 2005-2014 APA style of referencing got popularized among researchers.
  - Researches had followed the traditional institutional referencing style which does not have any uniform format of referencing.

**Implications:**

- Overall, considering the referencing style as an important aspect in reporting the research, a need was felt to make the researchers aware of the proper referencing style of international acceptance
- Overall, from the aforesaid, the standard referencing styles viz. Only APA style was used. No uniform referencing styles were dominating in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.

□ **Regarding Footnotes writing**

- Out of 149 Ph.D. researches, in 32 (21.48 percent) researches Foot/Endnotes were written but in 117 (78.52 percent) researches Foot/Endnotes were not written.
- Out of 124 M.Phil. researches in 23 (18.55 percent) researches Foot/Endnotes were written but in 101 (81.45 percent) researches Foot/Endnotes were not written.
- Out of 17 Project researches, in 6 (percent) researches Foot/Endnotes were written but in 11(64.71 percent) researches Foot/Endnotes were not written.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, in 61 (21.03 percent) researches Foot/Endnotes were written but in 229 (78.97 percent) researches Foot/Endnotes were not written.
- During 1964-2014, from the trend of researches with respect to the writing of Foot/Endnotes in the researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore, it was found that
  - In two decades 1964-1974 and 1975-1984 the habit of writing Foot/Endnotes was there but after that, it was found diminishing.
  - There was a steady decline in writing Foot/Endnotes among the researchers.
  - The healthy practice of Writing Foot/Endnotes was missing

**Implication:**

- Overall, from the aforesaid, it can be concluded that the skill of writing the foot/Endnotes as referencing styles were missing in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.

- **Regarding Properly and Legibility of Tables**
- Out of 149 Ph.D. researches, in 49 (32.79 percent) researches tables were properly made, in 89 (59.73 percent) researches tables were lacking legibility. No tables were found in 11 (7.38 percent) researches as these studies were descriptive and Philosophical.
- Out of 124 M.Phil. researches, in 46 (37.1 percent) researches tables were properly made, in 64 (51.61 percent) researches tables were lacking legibility. No-tables were found in 14 (11.29 percent) researches as these studies were Descriptive and Philosophical.
- Out of 17 Project Researches, in 3 (17.65 percent) researches tables were properly made, in 12 (70.59 percent) researches tables were lacking legibility. In 2 (11.76 percent) researches tables were not made as these studies were descriptive and Philosophical.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, in 98 (33.79 percent) researches tables were properly made, in 165 (56.90 percent) researches tables were lacking legibility. No tables were found in 27 (9.31 percent) researches as these studies were descriptive and Philosophical.
- During 1964-2014, from the trend of researches with respect to ‘Legibility and Properly made tables’, in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, it is evident that
  - It was found that the skill of drawing legible and proper tables in the research was not up to a satisfactory level. It can be concluded that the skill of drawing legible and proper tables was needed more attention in the researches.
  - It was also found that the Table presentation in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore did not follow any specific standard style of referencing.
- Looking into the table making scenario in the research at the School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014 variety of the errors like
  - The errors like Faulty Titles/Headings; No center alignment; Table number not allocated; Font size & style used in the table headings differ from the thesis’s font size & style; tables directly copied from the SPSS output file without any modification; Headings in some of

the tables were not in bold letters; Border was not in format; Tables were not in format; Rows in some tables were not in format; Incomplete boundaries were found; In some tables serial numbers were not mentioned; Heading was not given to tables; and Table mentioned in Index but not given in the later main section, were mostly occurring in the researches.

- While the errors table contents written by pen; Whole table was in bold letters; headings missing; Column alignments was found improper; Table number was not given; too small Font size; Table was found slant; Mismatch information; and too large Font size of matter in tables, were found in less number of the researches.

□ **Regarding Properly and Legibility of Graphs**

- Out of 149 Ph.D. researches, in 43 (28.86 percent) researches Graphs were properly made, in 72 (48.32 percent) researches graphs were lacking legibility. No Graphs were found in 34 (22.82 percent) researches.
- Out of 124 M.Phil. researches, in 44 (35.48 percent) researches Graphs were properly made, in 56 (45.16 percent) researches graphs were lacking legibility. No Graphs were found in 24 (19.35 percent) researches.
- Out of 17 Project Researches, in 2 (11.76 percent) researches Graphs were properly made, in 8 (47.06 percent) researches graphs were lacking legibility. In 7 (11.76 percent) researches Graphs were not made.
- Out of total 290 (Ph.D., M.Phil. and Project) researches, in 89 (30.69 percent) researches Graphs were properly made, in 136 (46.9 percent) researches graphs were lacking legibility. No Graphs were found in 65 (22.41 percent) researches.
- During 1964-2014, from the trend of researches with respect to the ‘Legibility and Properly made Graphs’ in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, it is evident that—
  - As out of total 290 researches, in 89 (30.69 percent) researches graphs were properly made, in 136 (46.9 percent) researches graphs were lacking legibility. No Graphs were found in 65 (22.41 percent) researches.

- It was found that the skill of drawing legible and proper graphs in the research was not up to a satisfactory level. It can be concluded that the skill of drawing legible and proper graphs was needed more attention in the researches.
- It was also found that the graph presentation in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore did not follow any specific standard style of referencing.
- Looking into the table making scenario in the research at the School of Education, Devi Ahilya Vishwavidyalaya, during 1964-2014 variety of the errors like —
  - The errors like Faulty Headings/titles; Graphs directly copied from the SPSS output file directly either without any modification; lack of writing scale/symbol; Hand-written texts in the computerized graphs; Information of abscissa and mantissa was not given; Bar graphs are not in format; Scaling was not done, Legend was missing, Incomplete information; Value on bar graphs were not given; data labels were missing; Linear graphs were found improper; Corrections were done and were not clear in graphs; Photocopy of graph was used; Headings to the graphs were not given; too small Font size in graphs; & Graphs were drawn by hands, were found commonly in the researches.
  - Along with these, errors like Alignment issues; Font type/Font Size errors; no center alignment; graph number not properly allocated; Photocopy of graph was used; Headings to the graphs were not given; Merged tables without any purpose; font size/style used in the graph headings differ from the thesis's font size/ style; were some of the most frequent errors located in the researches.

**Implications:**

- *Looking at the synoptic view of the component of Referencing in the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 a gloomy situation emerges out. Overall, from the aforesaid,*
- *The standard referencing styles viz. APA, MLA, Turabian referencing styles were completely neglected.*
- *Also at the same time, it can also be concluded that the institution was failed to make a standard format of referencing style for the researches.*

- *The skill of writing the footnotes as referencing styles were missing.*
- *The art of writing of other techniques like In-text citation, Bibliography, Annotated Bibliography and Webliography in the researches was strongly felt.*
- *The skill of writing the referencing styles properly and as per the standards of the referencing style was exhaustively missing.*
- *The scenario of Legible and properly making of Tables and Graphs as per some standardized referencing style was not satisfactory in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.*
- *The skill of drawing legible Tables and Graphs, properly, was a component that needs fair attention in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.*
- *A need was felt, to have a proper orientation for the researchers to make tables and Graphs more Legible and proper.*

#### **6.12.3.11 FINDINGS WITH RESPECT TO FINAL OUTPUT OF THE RESEARCH**

The findings with respect to the Final Output of the research at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 are as under—

- Out of 149 Ph.D. researches, the maximum ‘Instructional Materials’ were prepared in 33 (22.15 percent) researches, ‘Instructional Strategies’ was designed in 31 (20.81 percent) researches, ‘Descriptive surveys’ report were prepared in 23 (15.44 percent) researches, ‘Models of teaching’ were experimented in 16 (10.74 percent) researches, ‘Philosophical ideas and thinking’ was churned in 10 (6.71 percent) researches, ‘Microteaching and Feedback mechanism’ was researched as output in 9 (6.04 percent) researches, ‘Psychometrics and Correlated of Education’ were explored in 8 (5.37 percent) researches, ‘Software and Database’ were designed in 7 (4.70 percent) researches, ‘ETV/Radio related Broadcast’ was explored in 5 (3.36 percent) researches, ‘Curriculum Development’ and ‘Methods of teaching’ was explored in 3 (2.01 percent) researches each and ‘Case Study’ was taken up in 1 (0.67

percent) research. 'Value Prediction' and 'Proposal making' as research output was not taken up in the Ph. D. researches.

- Out of 124 M.Phil. Researches, maximally 'Models of Teaching' were experimented in 26 (20.97 percent) researches, 'Psychometrics and Correlates of Education' were explored in 24 (19.35 percent) researches, 'Descriptive Survey' 22 (17.74 percent) researches, 'Instructional Material' 11 (8.87 percent) researches, 'Philosophical Ideas and Thoughts' were churned out in 10 (8.06 percent) researches, 'Instructional Strategy' was developed in 7 (5.65 percent) researches, 'Software and Databases' were designed in 7 (5.65 percent) researches, 'ETV/ Radio Broadcasts' and 'Case study' were explored in 5 (4.03 percent) researches, 'Value Prediction' was explored 4 (3.23 percent) researches, 'Curriculum Development' in 2 (1.61 percent) researches, 'Methods of Teaching' was experimented in 1 (0.81 percent) research, 'Microteaching/Feedback' and 'Development of Proposal' as output was not explored in M.Phil. researches.
- Out of 17 research Projects, maximum 'Instructional Material' was the output in 4 (23.53 percent) researches, 'Models of Teaching' was experimented in 3 (17.65 percent) researches, 'Descriptive Survey', 'Instructional Strategies' and 'Software and Databases' were developed in 2 (11.76 percent) researches, 'Microteaching and Feedback' was explored in 2 (11.76 percent) researches, 'ETV/ Radio Broadcasts programs' were evaluated in 1 (5.88 percent) researches, 'Development of Proposal' was carried out in 1 (5.88 percent) research. 'Correlates and Psychometrics in Education', 'Philosophical Ideas', 'Case Study', 'Value Prediction', 'Curriculum Development', 'Methods of Teaching' as output were explored at the Project Level.
- Out of 290 (149 Ph.D., 124 M.Phil. and 17 Project researches), 'Instructional Material' was prepared as output in 49 (16.90 percent) researches, 'Descriptive Survey' was explored in 48 (16.55 percent) researches, 'Models of Teaching' was explored in 45 (15.52 percent) researches, 'Instructional Strategy' was explored in 40 (13.79 percent) researches, 'Psychometrics' was explored in 32 (11.03 percent) researches, 'Philosophical Ideas/Thinking' was explored in 20 (6.90

percent) researches, 'Software and Databases' was explored in 16 (5.52 percent) researches, 'Microteaching/Feedback' and 'ETV/ Radio related broadcasts' was explored in 11 (3.79 percent) researches, 'Case Study' was explored in 6 (2.07 percent) researches, 'Curriculum Development' was explored in 5 (1.72 percent) researches, 'Value Prediction' and 'Methods of Teaching' was explored in 4 (1.38 percent) researches and 'Development of Proposal' was explored in 1 (0.34 percent) research.

- From the aforesaid it can be concluded that the designing and developing the instructional materials viz. Modules on different subjects and grades; Computer Software; Computer assisted instructional material; and Web Instructional Materials were found to be the maximally produced as output in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014. 'Descriptive Surveys on the different constraints like Impact studies of Sarv Shiksha Abhiyaan; Mid Day meals; Distribution of the demographic and Affect Attribute variables; Achievement surveys; and Teaching Competency based surveys etc. were taken up at Primary, Secondary and Higher level of education. The Models of Teaching was also extensively explored area by researchers at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.
- It was clear that at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014—
  - At Ph.D. and Project level, maximum outputs were found related to 'Instructional Materials' i.e. Maximum number of researches was carried out related to developing Instructional Materials.
  - At the Ph.D. level, 'Instructional Strategies' and 'Survey reports' were found to be the second and third most popular areas respectively as far as research output was concerned.
  - At the M.Phil. level, maximum outputs were found related to 'Models of Teaching' i.e. the Maximum number of researches was carried out related to developing and experimenting related to 'Models of Teaching'. 'Correlates and Psychometrics in Education' and 'Instructional Materials' were found to be the second and third

most excavated areas respectively as far as research output was concerned.

- At the Project level, ‘Models of teaching’ was found to be the second most preferred area as far as the research output was concerned.
- Considering all the three levels of research (Ph.D., M.Phil. and Project) maximum outputs were found related to ‘Instructional Materials’ i.e. the Maximum number of researches was carried out related to developing ‘Instructional Materials’. ‘Surveys’, ‘Models of teaching’ and ‘Instructional Strategies’ were found to be the second, Third and Fourth most explored areas respectively as far as the research output was concerned. Preparation of the ‘Instructional Materials’ and conducting ‘Survey’ dominated the researches.

**Implications:**

- *It is implied that the School of Education, Devi Ahilya Vishwavidyalaya, Indore ’s focus area of research during 1964-2014 was Developing ‘Instructional Materials’, Designing ‘Models of Teaching’ and Conducting ‘Surveys’ and Evolving ‘Instructional Strategies’.*
- *Even though the researches were carried out in other areas but the aforesaid mentioned areas were found dominated the research situation at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014.*

**6.13 FINDINGS WITH RESPECT TO OBJECTIVE—4**

The objective—4 of the study was “*To synthesize the findings of the Educational researches based on the variables studied in the Educational Researches conducted at the School of Education, Devi Ahilya Vishwavidyalaya Indore*”. Area wise synthesis of research findings is mentioned in the following sections.

- A total of 207 studies (108 Ph.D., 87 M.Phil. and 12 Projects) out of 290 that were taken into account for synthesize research findings in the Educational Researches conducted at the School of Education, Devi Ahilya Vishwavidyalaya Indore.

- A total of 231 Independent and 243 Dependent variables were identified and studied under the process of synthesizing the findings of the Educational researches.
- The identified 231 Independent variables were studied 2376 times and identified 243 Dependent variables were studied 2364 times in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.
- As Independent Variable, maximally studied twenty variables were— 'Gender', 'Instructional Strategy', 'Intelligence', 'Feedback Mechanism System', 'IM', 'Personality', 'Model (CAM)', 'Creativity', 'ETV', 'Socio-Economic Status', 'Model (JIM)', 'Model (AOM)', 'Model (Synectics)', 'Adjustment', 'Self Confidence', 'Model (ITM)', 'Model (Value Analysis Model)', 'IM (PLM)', 'IS' and 'IM (Computer Assisted)'.
- As dependent variable, maximally studied twenty variables were— 'Achievement', 'Creativity', 'Reactions', 'Self Concept', 'Teaching Competency', 'Reasoning', 'Personality', 'Reading Skills', 'Role Commitment', 'Adjustment', 'Intelligence', 'Traditional Method', 'Use Of Skills', 'Self Confidence', 'Flexibility', 'Self Assessment', 'Value Clarification', 'Stress', 'Originality' and 'Attitude'
- A total of 3325 pairs of Independent Variables and Dependent Variables (IVs—DVs) were collected and studied, from the 207 studies including (108 Ph.D., 87 M.Phil. and 12 Projects) at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.
- Out of these 3325 pairs of Independent Variables and Dependent Variables (IVs—DVs), 2465 pairs were found without any interaction of Independent variables (IVs) and were considered for the present study to synthesize research findings. Rest 860 pairs of IVs-DVs were found with interaction of IVs so were not taken for synthesizing research findings.
- As Pair of Independent and Dependent variables (IVs—DVs), maximally studied twenty pairs were— 'IM—Achievement', 'Instructional Strategy—Achievement', 'Gender—Achievement', 'Intelligence—Achievement', 'IM—Reactions', 'IM—Traditional Method', 'Instructional Strategy—Creativity', 'ETV—Achievement', 'Personality—Achievement', 'Instructional Strategy—Reactions', 'Feedback Mechanism System—Use

of Skills', 'Instructional Strategy—Problem Solving Abilities', 'Creativity—Achievement', 'Gender-Creativity', 'Model (CAM)—Achievement', 'Model (CAM)—Reactions', 'Adjustment—Achievement', 'Model (JIM)—Personality', 'Intelligence—Self Concept' and 'Model (AOM)—Achievement'.

- The findings regarding the synthesis of research findings with respect to different independent variables and different Dependent variables are mentioned category-wise in the following sections.

### **6.13.1 ACHIEVEMENT**

The findings regarding the synthesis of research findings with respect to 'Achievement' as Independent variable with Different Dependent variables were—

- There was a significant positive effect of previous class Achievement on the current Achievement.
- Achievement in Numerical ability positively impacts the overall Achievement.
- Equally positive and neutral effect of achievement of one subject on other subjects' achievement. In one study the negative effect of achievement of one subject on other subjects' achievement was found.
- The achievement was not found to have a significant effect on Creativity and Teaching Competency.
- Achievement Motivation positively impacts Achievement in 3 studies but it negatively impacts the Aggressive behavior in one study.
- Achievement Motivation was not found to have a significant effect on Teaching Competency.
- Achievement effect on Originality and Achievement motivation's effect on Creativity was found significant in one study and has no effect in another study, makes the Synthesis inconclusive.

### **6.13.2 ADJUSTMENT**

The findings regarding the synthesis of research findings with respect to 'Adjustment' as Independent variable with Different Dependent variables were—

- There was a significant positive effect of Adjustment on Self Confidence, Values (democratic), Educational Adjustment, and Social Adjustment.

- No effect of Adjustment was on Achievement, Self Concept, Reasoning Abilities, Growth needs, Deficiency Needs, Stress, Anxiety, and Psychological Problems.
- The relationship of adjustment with achievement was found significantly negative in one study.

### **6.13.3 ADMINISTRATION RELATED VARIABLE**

The findings regarding the synthesis of research findings with respect to ‘Administration related Variables’ as Independent variable with Different Dependent variables were as under—

- The significant positive effect of Coaching in school was found on achievement.
- The significant positive effect of Curriculum design was found on communication skills.
- The significant positive effect of Guidance counseling practices was found on achievement, Reactions and classroom climate.
- The significant positive effect of Management of school was found on self-confidence and stress.
- The significant positive effect of Mid-day meal under SSA was found on students as their reactions were found more positive.
- The significant positive effect of the Nature of school was found on catering deficiency needs.
- The significant positive effect of Role commitment was found on job satisfaction.
- The significant positive effect of the School board was found on self-confidence.
- Seniority affects job satisfaction in a significantly positive way.
- The significant positive effect of Time-space management system was found in terms of reactions.
- The significant positive effect of Type of school was found on academic achievement motivation, Attitude towards science, Intelligence, self-esteem, Job satisfaction and Value (cooperation).
- A Significant positive effect of Study conditions was found on achievement.

- School Organization Climate was found a positive effect on Creativity and Adjustment.
- Employed as Government -Non-Government Teachers had no significant effect on Adjustment, Aptitude (Professional) and Teaching Behavior.
- Guidance Counseling Practices had no significant effect on Intelligence.
- Management of School had no significant effect on Anxiety.
- Nature of School had no significant effect on Growth Needs, Motivational Need and Role Commitment.
- Non-Formal Education holders had no significant effect on Attitude towards Non-Formal Education.
- Teaching Experience, Smartness, Qualification, Regularity, Resignation, and Type of Profession do not have any significant effect on Achievement.
- School Board does not have any effect on Anxiety.
- School Organization Climate had no significant effect on Originality.
- Teaching Experience had no significant effect on Achievement, Adjustment, and Attitude towards Teaching, Reactions, and Teaching Effectiveness.
- Teaching Position had no significant effect on Adjustment, Teaching Position-Attitude towards Teaching, Teaching Effectiveness.
- Trained/Untrained teachers had no significant effect on Job Satisfaction, Role Commitment.
- Type of School had no significant effect on Aggressive Behavior, Creativity, Originality, and Self-concept.
- Position in Administration did not have any significant effect on Time Management Awareness.
- Course done in Distance/regular mode did not have any effect on Teaching Competency.
- Type of School board did not have any significant effect on stress.
- The type of school did not have any significant effect on adjustment, self-concept, and values (national integration).

#### **6.13.4 ANXIETY AND STRESS**

Anxiety was found to have no significant effect on Teaching Competency, Creativity, Achievement, Reasoning, Anxiety, Deficiency needs, and Stress.

#### **6.13.5 ATTITUDE**

The findings regarding the synthesis of research findings with respect to ‘Attitude’ as Independent variable with Different Dependent variables were as under—

- Less number of studies were undertaken with the pair of ‘Attitude’ as an independent variable with other dependent variables.
- Attitude had a significant positive effect on Achievement, Conformity Behavior of the students and Time Management Competency.
- Attitude towards teaching was found to be a significant positive effect on Teaching (successfulness).
- Humor attitude towards teaching was found to have a significant positive effect on Teaching (successfulness).
- Attitude had no effect on Teaching Competency, Reasoning and Time Management Awareness.

#### **6.13.6 COMPUTER SOFTWARES**

The findings regarding the synthesis of research findings with respect to ‘Computer Software’ as Independent variable with different Dependent variables were found as under—

- Computer software (s) (like Computer-based Diagnostic test, Multimedia, Library Management system, Time-Space Management system) was found a significant positive effect on Achievement, Reactions, Attitude towards Science, Higher Mental Abilities and Reactions.
- An individual’s literacy of computers was found to have a significant positive effect on General Mental Abilities.
- Computer software (s) (like GOOTI and others few) were found no effect on Achievement and Reactions.
- The newspaper was found a significant positive effect on Child education.

- Computer Awareness was found to have no significant effect on Achievement, Attitude towards Science and Reasoning

### **6.13.7 CREATIVITY**

The findings regarding the synthesis of research findings with respect to ‘Creativity’ as Independent variable with different Dependent variables was found as under—

- There was a positive significant effect of Creativity on Achievement, Intelligence, Problem Solving Abilities, Teaching Competency, Attitude towards Science, Risk-Taking Behaviour, Personality, Self Confidence, and Originality.
- Verbal Creativity had a significant positive relationship with Non-Verbal Creativity.
- Creativity was found to have a significant negative effect on Adjustment, Attitude and Conformity Behaviour of the Students.
- Creativity was found to have no significant effect on Psychological Problems, Vocational Guidance Need and Fluency.

### **6.13.8 DEMOGRAPHIC VARIABLES**

The findings regarding the synthesis of research findings with respect to different Demographic Variables as Independent variables with different Dependent variables was described in the following sections.

#### **6.13.8.1 AGE**

The synthesis of research findings with respect to ‘Age’ as Independent variable with different Dependent variables was found as under—

- There was a significant positive effect of age on teaching competency, Aggressive Behavior, Interest and Teaching Behavior.
- There was a Neutral effect of Age on Achievement, Adjustment, and Values.

#### **6.13.8.2 BIRTH ORDER**

The synthesis of research findings with respect to ‘Birth Order’ as Independent variable with different Dependent variables was found as under—

- Birth order was found not effecting Moral judgment, Reasoning, Self-concept and Value Clarification.

#### **6.13.8.3 CASTE/ CLASS/ CATEGORY**

The findings regarding the synthesis of research findings with respect to ‘Caste/Class/Category’ as Independent variable with different Dependent variables was found as under—

- The class had a positive effect on creativity.
- Caste had a significant positive effect on Achievement, Attitude, Creativity, and Intelligence.
- Caste had a neutral effect on the Conformity Behavior of the Students, Use of Instructional Material, Self Concept, Spiritual Quotient, Values, Self Confidence, Self Esteem, and Value Clarification.

#### **6.13.8.4 EXPERIENCE**

The findings regarding the synthesis of research findings with respect to ‘Experience’ as Independent variable with different Dependent variables was found as under—

- The experience was found to be significantly positively effecting Achievement, Attitude towards teaching, Pupil involvement skills, Skills (lesson Evaluation), teaching Competency, Adjustment, Aptitude (professional), Attitude of teachers towards subjects, Educational Process and Teaching Behavior.
- The experience was not significantly affecting Attitude towards teaching, double seriation process, Attitude of pupils towards the subject, child-centered practices, Reasoning, Teaching Profession and Achievement.

#### **6.13.8.5 GENDER**

The findings regarding the synthesis of research findings with respect to ‘Gender’ as Independent variable with different Dependent variables was found as under—

- Gender was found to have significant positive effect on Interest, Reasoning, Self Confidence, Creativity, Intelligence, Adjustment, Self Concept, Attitude, Attitude Science, Job Satisfaction, Risk-Taking

Behavior, Self Esteem, Tolerance Of Ambiguity, Value Clarification, Flexibility, Stress, Direct Behavior, Originality, Social Maturity, Use of ICT, Academic Achievement Motivation, Aggressive Behavior, Conformity Behavior Of The Students, Deficiency Needs, Locus of Control, Mother Tongue, Problem Solving Ability, Religious Value, Teaching Behavior and Value (Empathy).

- Gender did not found any effect on Reasoning, Self Confidence, Creativity, Reading Skills, Role Commitment, Self Assessment, Teaching Competency, Value (Cooperation), Flexibility, stress, Direct behavior, Social Maturity, Originality, Human Rights Awareness, Value (Personal), Value Judgment Cooperation, Values (Democratic), Vocational Guidance Need, Achievement (Model Competency), Aesthetic Value, Anxiety, Aptitude (Professional), Attitude Toward Teaching, Attitude Towards Non Formal Education, General Mental Ability, Growth Needs, Higher Mental Ability, Indirect Behavior In Stream, Instructional Material (Video), Level of Aspiration, Moral Judgment, Motivational Need, Personality, Population Education Awareness, Reactions, Risk Taking Capacity, Skill (Listening), Socio Economic Status, Spiritual Quotient, Teaching Effectiveness, Time Management Competency, Time Management Awareness, Understanding About Learning Disabilities, Value (Economical), Value (Knowledge), Value (Occupational Aspiration), Value (Prestige), Value (Social), Value Clarification (Communal Harmony), Value Clarification (Cooperation), Value Clarification (Team Spirit), Value Discussion Knowledge, Value Judgment, Value Judgment (Discipline), Value Judgment (Kindness) and Value Judgment (Team Spirit).
- In one study gender was found negatively affecting the achievement.

#### **6.13.8.6 HABITAT/RESIDENTIAL BACKGROUND**

The findings regarding the synthesis of research findings with respect to 'Habitat/Residential Background' as Independent variable with different Dependent variables was found as under—

- Stress, Anxiety, Job Satisfaction and Values (democracy) was found positively dependent on the type of Habitat.

- Achievement, self-concept, Attitude towards Non-Formal Education, Human Rights Awareness, Reasoning, Self-confidence and Values (personal) was not dependent on Habitat.

#### **6.13.8.7 MARITAL STATUS**

The findings regarding the synthesis of research findings with respect to ‘Marital Status’ as Independent variable with different Dependent variables was found as under—

- Marital status was found a significant positive effect on Creativity and Achievement.
- There was no effect of Marital status on Adjustment, Job satisfaction.

#### **6.13.8.8 SOCIO-ECONOMIC STATUS (SES) AND OTHER VARIABLES**

The findings regarding the synthesis of research findings with respect to ‘Socio-Economic Status (SES)’, ‘Religion’, ‘Students’ Background’ and ‘Type of Family’ as Independent variable with different Dependent variables was found as under—

- There was a significant positive effect of socio-economic status/background on Creativity, Eye-Hand Coordination, Attitude, Locus of Control, Memory, Learning Disability, Receptive Language, Problem Solving Ability, Spatial Relation, Values (Democratic).
- There was no effect of socio-economic status on, Achievement, Self Concept, Creativity, Intelligence, Moral Judgment, Personality, Self Confidence, Teaching Competency, Value (Personal), And Value Clarification.
- Students’ background had no effect on Adjustment, Intelligence, and Locus of Control.
- Religion had no effect on creativity and personality.
- Belongingness to the tribal or non-tribal region did not have any effect on Values (Democratic).
- Type of family does not have any effect on Time Management Competency and Time Management Awareness

#### **6.13.8.8 STREAM OF EDUCATION/EDUCATIONAL LEVEL**

The findings regarding the synthesis of research findings with respect to ‘Stream of Education/ Educational Level’ as Independent variable with different Dependent variables was found as under—

- Stream of Education had a significant positive effect on Level of Aspiration, Achievement, Growth Needs, Human Rights Awareness, Motivational Need, Adjustment, Deficiency Needs, General Mental Ability, Indirect Behavior, Instructional Material (Video), Reasoning, Spiritual Quotient, and Vocational Guidance Need.
- The level of parent education had a significant positive effect on Moral Concept Development.
- Mother Academic qualification had a significant positive effect on Moral Concept Development.
- Stream of Education had no significant effect on Growth Needs, Human Rights Awareness, Motivational Need, Stream-Adjustment, Deficiency Needs, General Mental Ability, Indirect Behavior in Stream, Instructional Material (Video), Reasoning, Spiritual Quotient, and Vocational Guidance Need.
- The level of parent education had no significant effect on Self Concept.
- Education level had no significant effect on Adjustment and Job Satisfaction.
- Math/Non Math background had no significant effect on Achievement.

#### **6.13.9 DEPENDENCY**

The findings regarding the synthesis of research findings with respect to ‘Dependency level’ as Independent variable with different Dependent variables was found as under—

- Dependency was found to have a significant effect on Aptitude (professional).
- Dependency was found no significant effect on Creativity, Flexibility, Achievement, Self Assessment, Adjustment, Aptitude, Risk-Taking Capacity, Teaching Behavior and Value (Curiosity).

#### 6.13.10 EDUCATIONAL TELEVISION/RADIO BROADCAST

The findings regarding the synthesis of research findings with respect to 'Educational Television (ETV) and Radio' as Independent variables with different Dependent variables was found as under—

- Educational Television (Countrywide Classrooms) was found to have a significant effect on Achievement, Reactions, Attitude, and Self Assessment.
- No significant effect of Educational Television (Countrywide Classrooms) was found on Frustration level.
- Talkback mode was found to be more effective than without talk-back mode/direct mode.
- The interactive mode was found to be more effective than the simulated talk-back, Talk-back and Direct Mode.
- The live mode was more effective than the interactive mode in one of study.
- A significant positive effect of Talk-Back Mode was found on Achievement.
- A significant positive effect of Direct Mode was found on Achievement.
- No significant effect of Mode of ETV (Direct Mode, Interactive mode and Simulated Talk-back mode) on Habitat, Medium was found.
- No significant effect of With & Without Talkback on Achievement was found.
- No significant effect of With Interactive & Without Talkback on Achievement.
- Radio Broadcast programs were found to have no significant effect on Achievement.
- Radio Broadcast programs were found to have a significant effect on reactions.

#### **Implications:**

- *More and more Educational Television programs should be produced by the TV centers, EMRCs and other agencies, such as CIET, ARPIT, e-PG pathshala.*

- *Gradually Educational Institutions should be allotted with the independent production and transmission facilities.*
- *Separate channels should be provided for the Educational television programs*
- *For promoting research work in the area of educational television adequate grants should be provided by the funding agencies.*
- *There should be provision for Educational Television and Educational radio programs in the schedule of educational institutions.*

#### **6.13.11 EMOTIONAL INTELLIGENCE**

The findings regarding the synthesis of research findings with respect to ‘Emotional Intelligence’ as Independent variable with different Dependent variables was found as under—

- Emotional Intelligence was found to be a significant positive effect on Self Esteem and Reactions. It was not found to have any significant effect on Adjustment, Achievement, Reasoning, Social Maturity, and Teaching effectiveness.

#### **6.13.12 INSTRUCTIONAL MATERIAL**

There were 47 studies carried out using ‘Instructional Materials’ in the Educational researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014. There were 6 studies based on Computer-assisted Instructional Material, 21 studies based on Instructional Materials, 12 study based on Program learning Material and 8 studies based Video Instructional Materials were developed. Their effectiveness was studied on different Dependent Variables. The findings regarding the synthesis of research findings with respect to Instructional Material as Independent variable with different Dependent variables was found as under—

- Instructional Material was found to have significant positive effect on Achievement, Reactions, Traditional Method, Reading Skills, Creativity, Flexibility, Teaching Competency, Thinking Skills, Population Education Awareness, Reasoning, Intelligence, Attitude, Attitude towards Teaching, Elaboration, Exaggeration Identification, Moral Concept Development, Retention, Scam, Skill of Interviewing and Value (Curiosity).

- Teaching using Instructional material was found to be better than teaching using Selective Concept attainment model and Inquiry Training model (ITM)
- The instructional material was found significantly better than the traditional method.
- Instructional material in the form of Program Learning material was found to be better than the traditional method.
- Instructional Material (s) on diversified topics were found to have no effect on Value Discussion Knowledge, Self Concept, Value Clarification, Value Judgement Cooperation, Value Clarification, and Value Judgement

**Implications:**

- *Books and reading material should be designed and produced in the form of PLM and made available, adequately.*
- *Department/Colleges of Education and Educational Agencies should conduct orientation and training programs on PLM.*
- *Also, for its wide Deployment, the PLM should be made available in different media.*
- *AV/Video/Multimedia/ Computer-assisted Instructional Materials should be developed by the selected agencies and should be provided with production and dissemination facilities.*
- *Already produced AV/Video/Multimedia/ Computer-assisted Instructional Materials should be made available to the stakeholders.*
- *Computer software and Databases should be developed and implemented in the areas of administration, Evaluation, Assessment, and Library more and more. More researches should be done in this area.*
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**6.13.13 INSTRUCTIONAL STRATEGY**

During 1964-2014, 39 numbers of Different learning and instructional strategies experimented in the researches at School of Education, Devi Ahilya Vishwavidyalaya, Indore. Enumerating few were like Visual Verbal learning styles strategy, Piaget Conservational tasks, Web-based learning strategy, Demonstration cum Practical strategy, Vocational guidance strategy, Gaming Strategy, Mastery learning strategy, Video Instructional strategy, Remedial strategies, Feedback

Strategies, Collaborative, Community, and Content Management System, Multimedia strategy, Computer-assisted learning strategies, Training Programs on Teaching Competency, Need-based programs, Active learning strategies and Model competency strategies. The findings regarding the synthesis of research findings with respect to 'Instructional Strategy' as Independent variable with different Dependent variables was found as under—

- Instructional Strategy(ies) has been found significantly positively effective on Achievement, Reactions, Teaching Competency, Flexibility, Reasoning, Values (Democratic), Self Confidence, Value Clarification, Traditional Method, Fluency, Mathematics, Moral Judgment, Creativity, Self Concept, Adjustment, Aspiration, Attitude, Attitude Towards Mathematics, Discipline, Discussion Participating, Errors In The Learning Of Sanskrit, Gender, Graphical Interpretation Score, Intelligence, Interest, Kindness, Observer Assessed Behavior of Teacher, Observer Assisted Feedback Giving Competency, Retention, Skill (Listening), Stress (Memory), Task Classification, Task Conservation, Task Seriazation, Teaching Classification, Teaching Conservation, Teaching Seriazation, Time Management Competency and Value Judgment.
- Need Base Learning Program has been found significantly positively effective on Achievement, Attitude Toward Teaching, and Personality.
- Teaching strategy using (Demonstration Approach) has been found significantly positively effective on Creativity and Achievement.
- Teaching Techniques Applied has been found significantly positively effective on Teaching Competency.
- Training has been found significantly positively effective on Double Seriation, Pupil Involvement Skills, Skill (Lesson Evaluations), Teaching Competency, Achievement, Attitude towards Teaching, Attitude of the teachers towards Subject, Child-Centered Practices, and Educational Process
- Instructional Strategy was not found effective on Attitude towards Science, Room Climate, Higher Mental Ability, Originality, Taking Capacity, Time Management Awareness and Problem Solving abilities.
- Teaching Strategy was not found effective on Achievement (Model Competency).

- The training was not found effective on Attitude Of The Subject Towards Pupils, Teaching Profession.
- Teaching strategy (Demonstration Approach) was not found effective in Teaching Competency.
- In one study the reactions towards Instructional Strategy were found to be significantly negative.
- The effect of Instructional strategy on higher mental abilities was found to be inconclusive.

#### **6.13.14 INTELLIGENCE**

The findings regarding the synthesis of research findings with respect to ‘Intelligence’ as Independent variable with different Dependent variables was found as under—

- Intelligence was found to have been significant positive effect on Achievement, Self Confidence, Locus Of Control, Auditory Perception, Expressive Language, Higher Mental Ability, Interest, Learning Disability, Population Education Awareness, Position In Space, Problem Solving Ability, Receptive Language, Socio-Economic Status, Spatial Relation, Time Management Awareness, Emotional Intelligence and Values (Democratic)
- Intelligence was not found a significant effect on Teaching Competency, Adjustment, Aptitude, Moral Judgments, Originality, Reactions, Risk-Taking Capacity, Thinking Skills, Time Management Competency, Value Clarification, Anxiety, Self Assessment, Flexibility, Stress, Creativity, Reading Skills and Self Concept.
- Intelligence was found to have an inconclusive effect on Attitude towards science and Reasoning.
- In one study Intelligence was found to have been a significantly negative effect on Achievement.

#### **6.13.15 LEVEL OF ASPIRATION**

The findings regarding the synthesis of research findings with respect to ‘Aspiration’ level as Independent variable with different Dependent variables was found as under—

- There was a significant positive effect of the Level of Aspiration on Socio-Economic Status.
- There was a significant negative effect of the Level of Aspiration on Achievement.
- There was no effect of level of aspiration on Aggressive Behavior and Vocational Guidance Need.

#### **6.13.16 LOCUS OF CONTROL**

The findings regarding the synthesis of research findings with respect to Locus of Control as Independent variable with different Dependent variables was found as under—

- Locus of Control was having a significant positive effect on the Self-concept.
- There was no significant effect of Locus of Control on Achievement and Creativity.

#### **6.13.17 METHOD OF TEACHING**

The findings regarding the synthesis of research findings with respect to the ‘Method of Teaching’ as an Independent variable with different Dependent variables was found as under—

- Cognitive Emotional and Behavioral Loud Reading have been found to have a significant positive effect on Teaching Competency.
- Concept Formation has been found to have a significant positive effect on Achievement.
- The demonstration has been found to have a significant positive effect on the Traditional Method.
- Dialogue Method has been found to have a significant positive effect on Achievement, Discipline, Discussion Viewing, and Reactions.
- Dialogue Method was found significantly superior to the Traditional Method.
- Discussion Participating has been found to have a significant positive effect on Aspiration, Discussion Viewing, Interest, Kindness, Reactions, Value Judgment.

- Discussion Viewing has been found to have a significant positive effect on Interest, Kindness, Reactions and Value Judgment.
- Experimental Method has been found to have a significant positive effect on Attitude Science and Reactions.
- Method (Activity) has been found to have a significant positive effect on Achievement and Reactions.
- Method (Lab Method) has been found to have a significant positive effect on Achievement.
- Method (Set Induction) has been found to have a significant positive effect on Achievement.
- Set Induction method was found to be more effective than the Traditional Method.
- Traditional Method has been found to have a significant positive effect on Attitude, Self Concept, and Self Confidence.
- The use of Assignment has been found to have a significant positive effect on Achievement.
- Value Analysis method (VAM) Treatment duration has been found to have a significant positive effect on Moral Judgment.
- Cognitive Styles has been found to have no significant effect on Achievement and Creativity.
- Dialogue Method has been found to have no significant effect on Creativity and Dedication towards Teaching.
- Interactive session has been found to have no significant effect on Achievement.
- Laboratory Competency has been found to have no significant effect on Achievement
- Method (Lab Method) has been found to have no significant effect on Reasoning, Creativity, Dedication Towards Teaching, Originality, Teaching Competency, Value (Perseverance), Values (Cooperation), Values (Nationalism) and Value Judgment.
- In one study Experimental method found to have no significant effect on Achievement.
- In one study Traditional method was found to have no significant effect on Achievement.

### **6.13.18 MICROTEACHING AND FEEDBACK**

The findings regarding the synthesis of research findings with respect to ‘Micro-Teaching and Feedback’ as Independent variables with different Dependent variables were found as under—

- Feedback Mechanism System- has been found significant positive effect on Accept Feeling, Achievement, Behaviour of Teacher, Feedback, Observation of Lesson, Observer Assisted Behaviour of Teacher, Observer Assisted Feedback Giving Competency, Overall Evaluation by Feedback Receiver, Overall Feedback Receivers Behaviors, Overall Feedback giving Competence, Overall Feedback Receiving Competence, Overall Feedbackers Behaviors, Overall Social-Emotional, Personality, Reactions, Self Assessment, Skill (Criticizing), Skill (Lecturing), Social Emotional Climate, Teaching Effectiveness, Traditional Method, Use of Teaching Skills.
- Micro Teaching with Perceptual Modeling has a significant positive effect on Teaching Competency.
- ‘No Feedback’ has been found a significant effect on the Use of Teaching Skills.
- Feedback Mechanism System has been found no significant effect on Giving Direction, Adjustment, Ask Question, Attitude Toward Teaching, Idea Accept, Overall Types Of Feedback.
- Feedback has been found no significant effect on Achievement, Teaching Competency
- Micro Teaching with Audio Modeling has been found no significant effect on Teaching Competency,
- Teaching with Perceptual Modeling has been found no significant effect on Micro Teaching With Audio Modeling.
- Micro Teaching with Perceptual Modeling has been found no significant effect on Micro Teaching with Symbolic Modeling.
- Micro Teaching with Symbolic Modeling has been found no significant effect on Micro Teaching with Perceptual Modeling.
- Micro Teaching with Symbolic Modeling has been found no significant effect on Teaching Competency.

- Micro Teaching has been found no significant effect on Reactions.
- No Feedback has been found with no significant effect on Personality.
- Simulation Real Class has been found no significant effect on Rating.
- Simulation has been found no significant effect on Teaching Competency
- Simulation Real Class was found to have no effect on the Rating of Holistic teaching.

#### **6.13.19 MODELS OF TEACHING**

The findings regarding the synthesis of research findings with respect to ‘Models of Teaching’ as Independent variable with different Dependent variables were found as under—

- There were a variety of models of teaching that were explored. The findings were mentioned in the following sections.

##### **6.13.19.1 ADVANCE ORGANIZER MODEL**

The findings regarding the synthesis of research findings with respect to ‘Advance Organizer Model of Teaching’ as Independent variable with different Dependent variables were found as under—

- Advance Organizer model was found to be a significant positive effect on Achievement, Traditional Method, Achievement (Model Competency), Reactions, Retention, Personality, Reasoning, and Wholist Group teaching in Real Classroom Situation.
- The advance Organizer model was found to be more effective than teaching using Program Learning Material.
- Advance Organizer Model (AOM) was found to be a significant positive effect and found not effective on Delayed Retention in one–one studies each.
- Advance Organizer model was found to have no significant effect on Partial Group Simulation, Partistic Demonstration First Group In Sim, Partistic Class Situation, Teaching Competency, Wholistic Group in Simulation.
- Advance Organizer model was found to be equally effective to Set Induction Method

- Partistic Demo Approach using Advance Organizer Model was found to have a positive significant effect on Understanding about Advance Organizer Model (AOM)
- Partistic Demo Approach using Advance Organizer Model was found to have a significant positive effect on the Wholistic Demonstration of teaching.
- Wholistic Demo Approach using Advance Organizer Model was found to have no significant effect on Understanding about Advance Organizer Model (AOM)

#### **6.13.19.2 CONCEPT ATTAINMENT MODEL**

The findings regarding the synthesis of research findings with respect to ‘Concept Attainment Model (CAM) of Teaching’ as Independent variable with different Dependent variables were found as under—

- Concept Attainment model was found to be a significant positive effect on Achievement, Attitude, Intelligence, Personality, Reactions, Reasoning, Self Confidence, and Teaching Competency
- Receptive Concept attainment model was found to be significantly negatively effective than the Selective Concept Attainment model in teaching Science and Mathematics. i.e. Selective CAM was more effective than the RCAM.
- Reactions towards the use of RCAM were found to be negative in one of the studies.
- In two studies the reactions towards the use of Concept Attainment model were found to be significantly negative.

#### **6.13.19.3 COGNITIVE GROWTH MODEL**

The findings regarding the synthesis of research findings with respect to ‘Cognitive Growth Moral Development Model (CGMDM) of Teaching’ as Independent variable with different Dependent variables were found as under—

- Cognitive Growth Moral Development model of teaching has been found a significant positive effect on, Aptitude, Reactions, Achievement, and Double Seriation.

- Cognitive Growth Moral Development model of teaching has been found not significantly effective on Attitude towards Science, Successive Seriation, Reading Skills and Relative Seriation.
- Cognitive Growth Moral Development model of teaching was found not significantly effective and significantly effective on Additive Seriation, Self Concept, Transitivity of Length and Transitivity of Weight. Thus, the effect of Cognitive Growth Moral Development model of teaching on Additive Seriation, Self Concept, Transitivity of Length and Transitivity of Weight was inconclusive.

#### **6.13.19.4 INDUCTIVE THINKING MODEL**

The findings regarding the synthesis of research findings with respect to ‘Inductive Thinking Model of Teaching’ as Independent variable with different Dependent variables were found as under—

- Inductive Thinking Model was found to be a significant positive effect on Achievement, Teaching Competency, Reactions, Creativity, and Intelligence.
- Inductive Thinking Model was found to be significantly better than the Traditional Method.
- Receptive Inductive Thinking Model (RITM) was found to have negative Reactions in three studies.
- The Inquiry thinking model was found to have no effect and positive effect on Higher Mental Ability in the one-one study each.

#### **6.13.19.5 INQUIRY TRAINING MODEL**

The findings regarding the synthesis of research findings with respect to ‘Inquiry Training Model (ITrM) Model of Teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using inquiry training model was found to be a significant positive effect on Achievement, Creativity and Problem Solving Ability.
- Teaching using Inquiry Training Model was found to be significantly effective than the Traditional Method.

- Teaching using an inquiry training model was found to have no significant effect On Value Clarification and Value Clarification Factor.

#### **6.13.19.6 JURISPRUDENT INQUIRY MODEL**

The findings regarding the synthesis of research findings with respect to of ‘Jurisprudence Inquiry Model (JIM) of teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using Jurisprudence Inquiry Model was found to have no significant effect on Personality, Semantic Differential on Value Concept, Value (Dedication to Teaching Profession), Value (Perseverance), Value (Scientific Outlook), Value Clarification Battery, Value Judgment and Values (Nationalism).
- Teaching using Jurisprudence Inquiry Model was found to have no significant effect on Creativity, Shift In Value Preference, Values (Cooperation), Attitude Towards Science, Reactions, Value (Empathy), Value Clarification and Social Maturity.

#### **6.13.19.7 MEMORY MODEL**

The findings regarding the synthesis of research findings with respect to of ‘Memory Model (MM) of teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using Memory Model was found to have a significant positive effect on Achievement, Reactions, and Intelligence.

#### **6.13.19.8 STRESS REDUCTION MODEL**

The findings regarding the synthesis of research findings with respect to of ‘Stress Reduction Model (SRM)’ of teaching as Independent variable with different Dependent variables were found as under—

- Teaching using Stress Reduction Model (SRM) was found to have a significant positive effect on Stress reduction, Dilemma Clarification, Anxiety, Reactions, Self Concept, and Self Confidence.
- Teaching using Memory Model was found to have no significant effect on Achievement.

#### **6.13.19.9 SYNECTICS MODEL**

The findings regarding the synthesis of research findings with respect to of ‘Synectics Model (SM) of teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using Synectics Model (SM) was found to have a significant positive effect on Creativity, Reactions, Achievement, Reasoning, Fluency, Flexibility, Outlook Science and Risk-Taking Behaviour
- Teaching using Synectics Model (SM) and Tree Instructional Method (TIM) was found to have a significant positive effect on Achievement.
- Teaching using Synectics Model (SM) and Tree Instructional Method (TIM) was found to have no significant effect on Self Concept.

#### **6.13.19.10 T-GROUP MODEL**

The findings regarding the synthesis of research findings with respect to of ‘T-Group Model of teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using the T-Group Model (TGM) was found to have a significant positive effect on Achievement, Feedback, Value (cooperation), Reactions and Self Confidence.

#### **6.13.19.11 VALUE ANALYSIS MODEL**

The findings the regarding the synthesis of research findings with respect to of ‘Value Analysis Model (VAM) of teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using Value Analysis Model (VAM) was found to have a significant positive effect on Reactions, Attitude towards Value Education, Dedication towards teaching, Value Clarification, Value Judgment and Achievement.
- Teaching using Value Analysis Model (VAM) was found to have no significant effect on Originality, value (perseverance), Value (cooperation) and Value (nationalism).
- Out of the 10 studies, Teaching using Value Analysis Model (VAM) was found better than teaching using the Traditional Method. But in one study the Traditional method was found to be better than teaching using

Value Analysis Model. In the rest of the 4 times, teaching using VAM and Traditional method was found to be equally effective.

#### **6.13.19.12 VALUE DISCUSSION MODEL**

The findings regarding the synthesis of research findings with respect to of ‘Value Discussion Model (VDM) of teaching’ as Independent variable with different Dependent variables were found as under—

- Teaching using Value Discussion Model (VDM) was found to have a significant positive effect on Achievement, Adjustment, Attitude towards science, Classroom climate, Originality, Self Concept, Value (perseverance), Value Clarification and Value Judgment.
- Teaching using Value Analysis Model (VAM) was found to have no effect on Reasoning, Value (Cooperation) and Value (Judgment).

#### **6.13.19.13 MINI TEACHING INTEGRATION MODEL, PIAGETIAN MODEL, AND NON DIRECTIVE MODEL**

The findings regarding the synthesis of research findings with respect to of ‘Mini teaching Integration Model’, ‘Piagetian Model’ and Non-Directive Model of teaching’ as Independent variable with different Dependent variables were found as under—

- Mini Teaching Integration Model was found to have a significant positive effect on Teaching Competency
- Piagetian Teaching Model was found to have a significant positive effect on Achievement and Reactions.
- Mini Teaching Integration was found to have a positive effect and no effect on Attitude towards teaching in one study each. Hence no conclusion can be reached for the effect of Mini teaching Integration on Attitude towards teaching.
- Non-Directive Model was found to have no significant effect on Achievement and Intelligence

#### **6.13.20 PERSONALITY**

The findings regarding the synthesis of research findings with respect to ‘Personality’ as Independent variable with different Dependent variables were found as under—

- Personality has been found to be a significant positive effect on Teaching Competency, Self Esteem, Attitude, Intelligence, Observer Assisted Behavior Of Teacher, Observer Assisted Feedback Giving Competency, Overall Feedback Receiving Competency, Social Maturity, Value (Empathy) and Values (Democratic)
- Personality has been found no significant effect on Behavior Of Teacher, Feedback, Observation Of Lesson, Overall Evaluation By Feedback Receiver, Overall Feedback Receivers Behaviors, Overall Feedback Giving Competency, Overall Feed backers Behaviors, Overall Social-Emotional, Overall Types Of Feedback, Population Educational Awareness, Self Concept, Self Confidence, Social-Emotional Climate, Teaching Effectiveness, Time Management Competency, Time Management Awareness, Value Clarification, Achievement (Model Competency), Reading Skills, Reasoning, Self Assessment and Achievement.
- In one study personality was found to have a significant negative effect on Achievement.

#### **6.13.21 PERCEPTION**

The findings regarding the synthesis of research findings with respect to ‘Perception’ as Independent variable with different Dependent variables were found as under—

- Self Perception has been found to have a significant positive effect on Achievement, Commitment to Profession, Evaluation of Lesson, Relation with Head, Relation With Students and Teaching Competency.
- Perception has been found to have a significant positive effect on Critical Thinking and Teaching Competency.
- Peer Perception has been found no effect on Commitment to Profession, Professional Growth, Relation with Head, Relation with Students and Teaching Effectiveness.
- Perception has been found no effect on Achievement, Commitment to Profession, Evaluation of Lesson, Relation with Head, Relation with Students and Teaching Techniques Applied.

- Perception (Head) has been found to have no significant effect on Creativity, Relation with Head, Relation with Students and Teaching Effectiveness.

#### **6.13.22 REASONING**

The findings the regarding the synthesis of research findings with respect to ‘Reasoning’ as Independent variable with different Dependent variables were found as under—

- Clerical Speed and Accuracy was found a significantly positive effect on Achievement.
- Space Relation Scores were found a significantly positive effect on Achievement.
- No significant effect of reasoning skills was found on Achievement, Vocational Guidance Need, Model Competency achievement, and Creativity.
- There was no effect of Space Relation Scores on Vocational Guidance Needs.

#### **6.13.23 SELF ASSESSMENT**

The findings regarding the synthesis of research findings with respect to ‘Self assessment’ as Independent variables with other dependent variables

- Self Assessment was having a significant positive effect on Achievement. No significant effect of Self-assessment was found on Achievement motivation, Intelligence, Self Concept, and Self Confidence.

#### **6.13.24 SELF CONCEPT AND SELF CONFIDENCE**

The findings regarding the synthesis of research findings with respect to ‘Self Concept’ and ‘Self Confidence’ as Independent variables with different Dependent variables were found as under—

- Self Concept has been found a significant positive effect on Caste, Growth Needs, Motivational Need and Values (National Integration).
- Self Confidence has been found a significant positive effect on Auditory Perception, Self Confidence-Expressive Language, Eye-Hand Coordination, Feedback, Learning Disability, Memory, Receptive

Language, Spatial Relation, Stress, Thinking Skills, Deficiency Needs, and Self Concept.

- Self-esteem has been found no significant effect on Achievement, Vocational guidance need
- Self-confidence has been found to have no significant effect on Achievement, Creativity, Originality, Reasoning, Value (Curiosity) and Vocational Guidance Need.
- The self-concept has been found to have no significant effect on Achievement, Flexibility, Creativity, Adjustment, Personality, Risk-Taking Capacity, and Self Confidence

#### **6.13.25 MISCELLANEOUS INDEPENDENT VARIABLES**

The findings regarding the synthesis of research findings with respect to some Miscellaneous Independent variables with different Dependent variables were found as under—

- Tolerance of Ambiguity has been found no significant effect on Creativity, Flexibility, Originality, Risk-Taking Capacity and Achievement.
- Direct Behaviour has been found a significant positive effect on Choosing Stream.
- The Originality of Ideas has been found a significant positive effect on Teaching Competency.
- Interest has been found no significant effect on Profession Preference, Teaching Competency.
- Aggression has been found no significant effect on Achievement.
- Aspiration has been found no significant effect on Adjustment.
- Ambiguity has been found no significant effect on Creativity.
- Motivation has been found no significant effect on Time Management Competency and Time Management awareness.

#### **6.13.26 SKILLS AND ABILITY**

The findings regarding the synthesis of research findings with respect to ‘Skills’ and ‘Abilities’ as Independent variable with different Dependent variables were found as under—

- Concentration has been found a significant positive effect on Skill (Listening).
- Skill (Social) has been found a significant positive effect on Achievement
- Discipline has been found a significant positive effect on Teaching (Successfulness).
- Leadership Quality In Teaching has been found a significant positive effect on Teaching (Successfulness).
- Teaching Competency has been found a significant positive effect on Achievement.
- Aptitude has been found a significant positive effect on Adjustment and Teaching Behavior.
- Aptitude has been found no significant effect on Achievement and Teaching Effectiveness.
- Grade has been found no significant effect on Reading Skills.
- Problem Solving Abilities has been found no significant effect on Personality.
- Problem Solving Abilities has been found a significant positive effect on Achievement, Intelligence, and Creativity.
- Skill (Reading) has been found no significant effect on Achievement and Teaching Skills.
- Study Habits has been found no significant effect on Achievement, Creativity, Reading Skills, Reasoning, and Creativity.
- Teaching Competency has been found no significant effect on Direct Behavior and Indirect Behavior In Stream.
- Skills (reading) were found to have no significant effect on Reasoning.

#### **6.13.27 TESTING**

The findings regarding the synthesis of research findings with respect to ‘Testing Conditions’ as Independent variable with different Dependent variables were found as under—

- Diagnostic Test has been found a significant positive effect on locating Errors in the learning of Sanskrit and identifying Common distracters.
- Difficulty Value has been found a significant positive effect on Self Assessment.

- Distracters have been found a significant positive effect on Item Difficulty.
- Multiple Discriminative types Items (MDTI) has been found a significant positive effect on Distracters.
- Dilemma Questions have been found significant positive effect on Moral Concept Development.
- Remedial Teaching has been found a significant positive effect on Achievement, Error Location, Intelligence, and Reactions.
- Testing Time has been found a significant positive effect on Achievement.
- Testing has been found a significant positive effect on Achievement, Dedication towards Teaching, Semantic Space on Activity Dimension, Semantic Space on Evaluation Dimension and Semantic Space on Potency Dimension, and
- Testing has been found no significant effect on Value Clarifying Factor.

#### **6.13.28 TEACHING LEARNING MATERIALS (TLM)**

The findings regarding the synthesis of research findings with respect to ‘Teaching-learning Materials’ as Independent variable with different Dependent variables were found as under—

- Optical devices were found to be positively affecting Reading skills.
- Audio-Visual aids were found to have a positive effect on Achievement
- Teaching-learning materials prepared by teachers were found to have a significant positive effect on the Achievement.

#### **6.13.29 VALUES**

The findings regarding the synthesis of research findings with respect to different types of Values as Independent variable with different Dependent variables were found as under—

- Curiosity had been found a significant positive effect on Achievement.
- Value Judgement was found to have a significant positive effect on Value Judgement.
- Vocational Maturity was found to have a significant positive effect on Job Satisfaction.

- Meditation had been found a significant positive effect on Reactions.
- Cooperation was found to have no significant effect on Adjustment, Intelligence, and Personality.
- Cooperation was found to have no significant effect on Personality.
- Discipline was found to have no significant effect on Adjustment, Attitude toward Teaching, Teaching Effectiveness.
- Grade was found to have no significant effect on Values (Democratic).
- Risk-Taking Behaviour had been found no significant effect on Originality, Value (Curiosity) and Creativity.
- Social Maturity was found to have no significant effect on Achievement.
- Socio Characteristics was found to have no significant effect on Value (Curiosity) and Creativity.
- Values were found to have no significant effect on Time Management Competency and Time Management awareness and Role Commitment.
- Frustration was found to have no significant effect on Role Commitment.
- Values were found to have no significant effect on Role Commitment.

#### **Implications from Research Synthesis:**

*The implication and suggestions from the Synthesis of Research Findings are as under. Synthesis of the research findings will help the future researchers in the following manner—*

- *Researchers can easily find which variables are already studied in an ample number and which variables are less studied.*
- *They can easily find which independent variable had a Positive or Negative or Neutral impact on Dependent Variables?*
- *They can easily find which pair of IVs—DVs have to study further for making some conclusions.*
- *For ease of the researchers, which pair of IV—DV should be studied further or not the following mechanism can be followed—*
  - *The Independent variable and Dependent Variable (IV—DV) pairs for which positive/negative results were found, (except the singleton or fewer studied), should be avoided for the study by the coming generation of researchers.*

- *The Independent variable and Dependent Variable (IV—DV) pairs for which neutral result was found, should be taken for further study so as to arrive at some conclusions. If similar findings were found again there it can be conclusive that, in that specific pair of IV—DV, the Independent variable has no/neutral effect on Dependent Variable.*
- *The Independent variable and Dependent Variable (IV—DV) pairs for which inconclusive results were found (equal number of findings in each Positive, Negative and Neutral), should be taken for further study by the coming generation of researchers.*

#### **6.14 DISCUSSION**

The present research titled ‘Trend analysis of the Educational research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore’ has come up with findings which are mentioned in the previous sections. Now, how much these findings are consistent with or contradicting the earlier findings is the focus of discussion in the present section.

The major trends viz. Maximum Number of the studies in the decade 1985-1994; Dominance of ‘Educational Technology/Information and Communication Technology’ and ‘Teacher Education’ as Primary and Secondary Area of Research respectively; Non-Uniform Growth of different areas; Ample use of Experimental Method and Designs; Quantitative researches superseded Qualitative research (in number) in every decade; Monopoly of Local-level and Probabilistic samples; proclivity towards use of Standardized test over self made tools; more use of Parametric statistics; wanting level of Reviewed literature by the researchers; inadequate Research reporting skills of researchers; wanting valid referencing style; Less involvement of teachers in pursuing research projects; Ph.D.s outnumbered M.Phil. and Projects (in number) in all decades; more Production of ‘Instructional Material’ and ‘Descriptive surveys’ as research output; were found in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, during 1964-2014.

One of the findings that ‘Non-uniform growth in different areas of the educational research and constituent areas’ was in tune with that reported by Buch (ed.) (1974), Raina & Sengupta (1979), Buch (ed.) (1979), Buch (ed.) (1987), Buch (ed.) (1991), Panda, Satyanarayan and Sharma (1996), NCERT (2000), Gupta and

Koul (2007), Shetty, Hiremath, Murugan & Sreeja (2010), Yadav (2011), and Livingston & Flores (2017).

Further researches should fill gaps in identified research areas which were left unattended as reported by Zane, Berge & Susan (2004); Olaf, Eva & Sebastian (2009); Lee, Wu & Tsai (2009); Ayfer & Yasemin (2009); Zao & Gang (2009); Bretones, Maurer, Khan & Salman (2010); Shetty, Hiremath, Murugan & Sreeja (2010); Paulo & Megid (2011); Chang & Tseng (2011) and Yadav (2011), was also confirmed by the present research.

‘Deprived areas should be given attention as recommended’ as found by Buch (ed.) (1974), Raina & Sengupta (1979), Buch (ed.) (1979), Buch (ed.) (1987), Gayatri (1989), Jawade (1990), Buch (ed.) (1991), Panda, Satyanarayan and Sharma (1996) and NCERT (2000), Yadav (2011) was also supported by the present study.

Another finding like ‘Dominance of the ‘Educational technology/ Information and Communication Technology’ as area of research was found at par with the findings of studies by Buch (ed.) (1979), Pal (1984), Singh (1987), Buch (ed.) (1991), NCERT (2000), Shaheen (1994) and Yadav (2011) .

‘Perceived low research Reporting skills and Lack of proper referencing styles’ as reported by Shaheen (1994), Mishra (2002), Gupta (2003), Singh and Desai (2009), Yadav (2011), Ayfer & Yasemin (2009) and Hallinger (2011) was also supported by the present piece of research.

Issues on selection, Size, and Level of the sample were reported in the Ayfer & Yasemin (2002) and Hallinger (2011) were partially found in the present research, too.

The study was in line with the finding of Quantitative methods were found dominating as reported in Koul (1991), Raina & Srivastava (1997), Gupta and Koul (2007) and Yadav (2011), Ebru, Ayca, Pinar Mustafa and Murat (2013), Eđmir, Erdem and and Koçyiđit (2017) and Livingston & Flores (2017).

Lack of Qualitative and Mixed method researches in the Educational Research as Observed by Koul (1991), Raina & Srivastava (1997), Gupta and Koul (2007) and Yadav (2011), Ebru, Ayca, Pinar Mustafa and Murat (2013), Eđmir, Erdem and and Koçyiđit (2017) and Livingston & Flores (2017). was also found by the present research.

With respect to different aspects of research, namely, Ignored research review, Errors in data analysis techniques, Use of language jargons, Lack of language mastery, and lack of discussion on findings as reported by Shaheen (1994), Panda, Satyanarayana and Sharma (1996), Venkataiah (2001), Gupta and Koul (2007), Singh & Desai (2009) and Yadav (2011) was also confirmed by the present research.

There is a lack of Indian and foreign researches in the area of Research synthesis of educational researchers with the 'Vote Counting Method'. This left the researcher with no option, but, to keep the findings of the present study's Research synthesis intact till more educational researches in the area of Research Synthesis and Meta-analysis, confirm or contradict the same.

Only two studies Mohanty (1989) and Jawade (1990) were found related to the research synthesis using the Vote-counting method. The outcome of the present study with respect to synthesizing research findings was in line with that reported by Mohanty (1989) and Jawade (1990) in the area of 'Creativity' and 'Educational Technology', respectively.

To discuss findings with respect to each and every pair of IVs—DVs in the research synthesis is beyond the scope of present research because, firstly, conclusions with respect to every pair of IVs—DVs were already mentioned in chapter 5. Secondly, the question 'why the pair had such relationship?' was answered and discussed in that respective research work from which it has been taken up.

Based on the findings of present research, one could easily recommend, that further researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore, should be carried out—in the deprived areas which were not given attention; using Qualitative and Mixed approaches; using different methods other than experimental one only; using those experimental designs which were not employed yet; with if parametric statistics to be used then the underlying assumptions should be tested; with samples not from local ones; with Non-parametric statistics data- analysis techniques; in Hindi scripts to popularize and expertise the national language; and many others.

But, let these decisions be left to the research guides and young researchers. They are the best judge to plan and execute their pieces of researches in the light of areas having national/societal importance as elaborated in the

National/international policies, by avoiding duplication of work and filling the research gaps. But at the same time, they can look into the findings of the present research, which will help them to identify which areas of research and their components need attention, which type of variables have already been studied, what relationship of different Independent–Dependent variables has already been established and where lie the research gaps.

At the same time reviewing a piece of research under the lens of ‘...as mentioned in the Research Methodology text-books’ sometimes finds to be too utopian and idealistic. On the other hand, it is best known to the researcher and guides what practical modalities were encountered and what adjustments in the so-called ‘assumptions and principles mentioned in the Research Methodology text-books’ are to be made, to carry out a piece of research. The task of the reviewer is locating ‘how much such adjustments were made that deviated from the actual principles and assumptions’. At the same time, it is also the duty of the reviewers to point out ‘what went wrong’ and ‘how it can be rectified or avoided’. At the same time, a reviewer has to find out ‘Are there violations of assumptions/principles which needed to be attended’. From the researchers’ point of view, the attempts of reviewing and synthesizing research findings should be periodic and conducted by every department where so ever the research is going on.

As far as the research trend was concerned, it was found that— More use of Quantitative researches, Probabilistic Sampling, Experimental designs, Standardized tools, and Parametric Statistics were there in the researches at the School of Education, Devi Ahilya Vishwavidyalaya, Indore. Out of a total of 290 (Ph.D., M.Phil. and Project) researches,

- 249 (85.86 percent) researches were of Quantitative Nature,
- 160 (55.17 percent) researches were carried out using Experimental Methods.
- 65.47 percent times Probabilistic sampling technique was used
- In a maximum 125 (43.1 percent) researches both standardized and Non-standardized tools were utilized.
- in 187 (64.48 percent) researches maximum Parametric statistical techniques were used.

Joining the above trends and inclinations, one can find that all of the above are linked to each other. It's like cracking a formula for doing research at the School of Education, Devi Ahilya Vishwavidyalaya, Indore. Once a researcher decided to take up a Quantitative study, it is like following a procedure of taking a probabilistic sample (local level convenience sample), taking up a suitable Experimental design (from the list as envisaged by Stanley and Campbell), take ready-made standardized tools, apply it on a sample more than 30 and perform a rigorous parametric inferential statistics. Otherwise, for doing survey research the methodology will be the same except the experimental design.

There is a strong need to de-mechanize this formula to explore the new avenues rather than polarizing and participating in the herd.

Coming to conclusive remarks on the discussion, reaching the judgment regarding the relative standard of researches conducted at the School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014, is highly desirable. The School of Education, Devi Ahilya Vishwavidyalaya, Indore being, one of the pioneer institutes of Education has made significant impact on National Education system and still, it impacts by shaping up several policies of Education and teacher education *per se*. Several components of the research done at School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014 are exemplary. To Count on these, some were works in the area of Educational Technology, Models of teaching, Instructional Material, Instructional Strategies, Methods of teaching, Micro-teaching. Surveys and Philosophy of Education were found to have a significant effect on the National Teacher Education policies. But at the same time, No research is error-free. In the words of Popper, "*In so far as a scientific statement speaks about reality, it must be falsifiable; and in so far as it is not falsifiable, it does not speak about reality...*"

Further, the present researcher is of the strong opinion, that, the trends related to different components of research at School of Education, Devi Ahilya Vishwavidyalaya must be studied carefully; deprived & less focused areas of research should be given attention; a variety of Sampling techniques, Methods, Techniques and Tools of research should be encouraged for being taken up; judicious statistical analysis should be taken up; researches in the various areas should be carried out but not at the cost of the unexplored areas; Research Writing skills should be honed; Orientations and workshops in the various areas of

academic and research skills should be encouraged and conducted; researchers and guide should be encouraged to take up novel areas of research, periodic review of the researches should be taken up at the departmental level; and replications of the studies should be welcomed but duplication of any sort should be avoided.

Some more implications and suggestions given for the different stakeholders, based on findings of the present research, are presented in the following sections.

## **6.15 IMPLICATIONS FOR DIFFERENT STAKEHOLDERS**

Nevertheless, the implications with respect to different components of research were given earlier in a detailed manner, yet the implications for stakeholders partying to the School of Education, Devi Ahilya Vishwavidyalaya, Indore are mentioned in the following sections.

### **6.15.1 FOR STUDENTS/RESEARCHERS**

- Researchers should develop in selves the behavior of innovativeness, risk-taking to explore new avenues.
- Researchers should be encouraged to take diverse fields for research.
- Researchers should report the effect size or effect magnitude of the research findings if the experimental studies were taken by them.
- A meta-analysis of the research findings as research should be taken up by the forthcoming researchers.
- There is a need for quality Research writing orientation for the researchers at the M.Ed., M.Phil. and Ph.D. level at School of Education, Devi Ahilya Vishwavidyalaya, Indore.
- Students/ researchers should learn the skills of Paraphrasing, Report writing, analyzing skills.
- Researchers should encourage for writing/typing their Students' Research of their own.

### **6.15.2 FOR TEACHERS & RESEARCH GUIDES**

- A mechanism can be developed, at the Institution level, for covering different recommended key areas as envisaged by National and State documents, from time to time, for Educational research studies.

- Research supervisors should be encouraged for taking diverse fields rather than their compartmental research areas.
- Teachers can draft a strategy for quality research Orientation for the researchers at the M.Ed., M.Phil. and Ph.D. level at School of Education, Devi Ahilya Vishwavidyalaya, Indore and in other similar institutions on the basis of the findings and suggestions of the present research.
- A teacher can encourage their students to take new areas of research for the comprehensive coverage of the different area of research.
- A teacher can develop a monograph/manual for research report writing for the reports to be written in Hindi.
- A teacher should teach, preach, use and encourage the standard styles of referencing in Research by using the findings of the present research.
- Present research can be useful for Teachers to encourage diverse research methods viz. Qualitative, Mixed method apart from the Quantitative research one, varied data analysis techniques apart from the Parametric one, balancing the use of Probabilistic sampling technique with that of the Non-probabilistic one in the students' research at all levels.

### **6.15.3 FOR ADMINISTRATORS**

- Administrators can support the research activities in their departments that led to creating a healthy and supportive climate for the quality Educational research.
- Research Guides/Supervisors, Administrators, and Research Development Committee of the department should monitor
  - Whether the diversified areas are been taken up by the researchers or not.
  - Researches of National and Local Importance are being taken up or not.
  - Duplication and replications of the studies.
  - Reporting styles.
- The present research can be useful for the administrators of the School of Education, Devi Ahilya Vishwavidyalaya, Indore, to channelize the Educational Research in the Department.

#### **6.15.4 FOR LIBRARY MANAGEMENT SYSTEM**

- The library management system for preserving and proper maintenance of the theses should be reorganized so that the researches remain protected for more time.
- Some thesis that was not found during this research can affect the findings of the present research in a different manner. But the no availability of the researches reports in the library raises the issues of security and preservation of the students' research.
- The library should procure the hard and soft copies of the Theses, Dissertations and Project Reports for future use.
- Diminishing Theft/Lost/damage of the research Theses, Dissertations and Project Reports should be on priority for the Library Management.

#### **6.15.5 FOR TEXTBOOK WRITERS**

- Books on the Research writings using different Referencing styles can be published in Hindi and English for the targeted beneficiaries by using the findings of the present piece of research

#### **6.15.6 FOR POLICYMAKERS**

- The present piece of research can help for making policies on the quality of Educational research in India in that aim.
- To shape the future course of action in the field of educational research the present piece of research can add few bits.
- To make polices to create a healthy and supportive climate in the educational department for the quality research
- Policymakers can prioritize the contemporary areas of the research that best suits to formulate any action plan to develop the educational system as a whole.
- A research survey of the M.Ed. / M.Phil. These should be prepared as like that of the Ph.D. research Surveys initiated by M. B. Buch followed by NCERT.
- An Orientation for the different areas of research like qualitative research methods and methodology, Analysis in qualitative research, etc could be started to increase the diversity in research.

## **6.16 SUGGESTIONS FOR FURTHER STUDIES**

Since the present study was delimited to the Educational research of School of Education, Devi Ahilya Vishwavidyalaya, Indore during 1964-2014, the researcher would like to suggest some more topics for the further research with the following themes which can help in further exploration in the line with the present research—

- ❑ A meta-analysis of research findings related to the Effect of interaction of Independent Variables on Dependent variables can be studied.
- ❑ Studies with Standard Meta-Analysis methods of research synthesis can be taken.
- ❑ A comparative study of research synthesis using Vote counting Method and Standard Meta-Analysis method can be undertaken.
- ❑ A comparative study of Trends of Educational Researches in different University Departments of Education at the National level can be conducted.
- ❑ Comparative study of Trends of Educational Research in different Central University Departments of Education and of State University Department of Education can be undertaken.
- ❑ Studies can be conducted on the construction and standardization of the Educational Research Review scale/tool for reviewing Educational researches.
- ❑ A study on the National Scenario of Educational research can be undertaken.
- ❑ A study on rationalizing the findings of the present study can be undertaken.
- ❑ A study on the research Aptitude of the Educational Researchers can be undertaken.
- ❑ Trends analysis and Review of the Researches in other Department of Education in the state of Madhya Pradesh can be undertaken.
- ❑ Trends analysis and Review of the Researches in other old Department of Education in other Indian states can be undertaken.
- ❑ Policy framing based on the convergent and divergent research findings can be materialized.

## **6.17 CONCLUSION**

The researcher is of the firm opinion that, first, thorough programs and orientations in the field of the Research Methodology and Research Writing should be carried in the Educational Departments of Indian Universities. Second, periodic and regular appraisal & review systems about the educational researches should be cultivated and implemented at the department/local/state/national levels. Third, encouragement, motivation & chances should be given to the young researcher for exploring the untagged areas and for the exhaustive cover-up of the different areas of research. Fourth, at the same time the different Methodologies, Methods, Designs, Tools, Techniques; Data Analysis Techniques should be taken up by the researchers. Fifth, attempts to be made in the direction of the Meta-Analysis and Synthesis of the research findings in the discipline of Educational Research so as to synthesis the multiple singleton realities into some justified, comprehensible, and decision-making reality.

Further, it can be elicited easily while concluding from the present piece of research that a Balanced, Wholistic and Equitable importance should be given to the different components and areas of the Educational Research so as to cultivate and all-around developed system, sooth for Teaching-Learning, Research, and Living.

There is a need to induce research rigour in education right from the research agenda through the research methodology, synthesis, and trend analysis. Though various attempts have been made for synthesizing and trend analyzing research, but, implications do not find expressions at the operational level. Instead of recursively duplicating the research, it is advisable to identify need-based problems, scientific formulations, and systematizing research. Every bit of research output has a due return on the investment, and research has a lot to offer for addressing the present-day problems. The present study worked out the methodology and implications of educational research synthesis and trend analysis. The emerging thesis of the present study culminates into that the educational research on our problems ought to be rooted in our culture in terms of problem identification, problem formulation, research methodology, research reporting and synthesizing individual realities. More and more, it finds expressions through our own culture better and better are likely to be solutions.