TREND ANALYSIS OF THE EDUCATIONAL RESEARCH AT THE SCHOOL OF EDUCATION, DEVI AHILYA VISHWAVIDYALAYA, INDORE

SUMMARY

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1.1   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; Eğmir, Erdem and Koçyiğit, 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.

1.2 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).

1.3   DIFFERENT METHODS OF LOCATING TREND AND RESEARCH SYNTHESIS

The process of a trend analysis followed by research synthesis begins with identifying the category of the events that are under consideration. Once the focus is established, one takes a look at the general performance for the category over the last couple of years. This helps to identify key factors that led to the current trend of performance for the entity under consideration. By understanding how a given event reached the current level of performance, it is then possible to determine if all or most of those factors are still exerting an influence. After identifying past and present factors that are maintaining a current trend in performance, one can analyze each factor and project which factors are likely to continue exerting influence on the direction of the event. Assuming that all or most of the factors will continue to exert an influence for the foreseeable future, one can make an informed decision on the future course of action.

So, trend analysis and research synthesis are important, both, as a scientific activity and of the practical uses made of the conclusions which are derived from research trend synthesis. The process of the trend analysis and research synthesis of educational research can be systematically done with using the following Methods.

A. Narrative approach: As the name indicates, it is a verbal description of the research studies arranged chronologically about what the researcher did in each study & the results found. It is most suitable when the number of studies on a topic is small. The strength of the narrative approach is —

    a. It provides richness of the details about the study characteristics

    b. It allows the researches to trace the evolution of thought because of the chronological arrangement.

    c. It can be used to synthesize two or more different lines of research that may bear only indirectly on each other.

B. Vote counting method: It is the most popular and is supplanted from the narrative method when there are a larger number of studies. It involves categorizing the studies on the basis of the direction & statistical significance. In the conventional vote-counting procedure, one simply divides studies into three categories: those with significant positive results, those with significant negative results, and those with non-significant results. The number of studies falling into each of these three categories is then simply tallied. If a plurality of studies falls into any one of these three categories, with few falling into the other two, the modal category is declared the winner. This modal category is then assumed to give the best estimate of the direction of the true relationship between the independent and dependent variable (Light and Smith, 1971), (Brushman and Wang, 2009). Vote counting procedures are useful when complete information about the results of primary studies is not available in the sense that effect size estimates cannot be calculated. In such situations often the information from a primary source is in the form of a report of the decision obtained from a significance test (i.e., significant positive relation or non-significant positive relation) or in the form of a direction (positive or negative) of the effect without regard to its statistical significance. The strength of the vote-counting method is: (a) once the relevant set of studies to be synthesized has been identified, the method can be executed quickly. (b)Results of vote counting are replicable because it is less subjective.

C. Combined significant tests: This method involves the combining of probabilities or common test of significance statistics across several studies addressing the same research questions & assessing the statistical significance of these overall values. This method was introduced because of the inadequacy of the voting method. The main

importance of the combined significance method is that they help to eliminate the low treatment effect of the vote-counting method. Rosenthal (1978) provided an excellent description of the procedures, advantages, limitations, and applicability of nine combined significance tests Adding logs; Adding 'p's; Adding 't's; Adding 'Z's; Adding weighted 'Z's; Testing means 'p'; Testing means Z; Counting and Blocking. This is a highly significant method but it does not have any mechanism explaining the variability of results across studies.

D. Effect Magnitude Method: Glass coined the term 'Meta-Analysis' to refer to the methods of research synthesis that are statistical in nature. Meta-analysis is a formal statistical method that assessed the magnitude of an effect. Glass developed this technique so that a variety of findings could be quantified, standardized & then compared across studies. Meta-analysis uses the 'Effect size (E_s)' statistics

$$E_s = (X_t - X_c) / SD_p$$

Where X_t = Mean of the treatment group; X_c = Mean of Control group; SD_p = Pooled Standard deviation of the control and experimental group.

$$SD_p = \frac{(Ne-1)Se^2 + (Nc-1)Sc^2}{(Ne+Nc-2)},$$

Where N_e = Number of subjects in Experimental Group, N_c = Number of subjects in Control Group, S_e = Standard deviation of the Experimental Group, S_c = Standard deviation of the Control Group.

These statistics provide a composite figure for treatment effect which synthesizes the general impact of the treatment across the different studies. The effect size for each of the findings in a study is computed and Es are then averaged together. This allows for significance & non-significance findings to influence the total ES equally, thus minimizing the possible influence of type I & type II errors, evaluating research findings. Meta-analysis fulfills three criteria

a)   Only studies examining the effect of a series of lessons or training treatment were included.

b)   Only those studies which are equal in a single variable are included which is done for the comparability among studies in terms of the characteristics.

c)   The third criterion for including a study in meta-analysis is a technical one. In order to be included, a study has to provide sufficient data from which an Effect Size (E_S) can be calculated.

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1.4 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.

1.5 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), Eğmir, Erdem and Koçyiğit (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), Eğmir, Erdem and Koçyiğit (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.

1.6   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 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.

1.7   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?

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

1.8 TITLE OF THE STUDY

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

1.9 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 Students' Research

    ii. Physical information of the Students' Research

    iii. Area of the research

    iv. Reviewed Literature

    v. the Methodology of research

    vi. Type of research

    vii. Sampling technique used

    viii. Tools used

    ix. The 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.

1.10 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.

1.11   METHODOLOGY

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

1.11.1 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.

1.11.2 TOOL

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

1.11.3 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.

❒ 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. [Out of 161 Ph.D., 131 M.Phil., 714 M.Ed. and 27 Research Projects studies carried out 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 M.Ed. studies were not taken for consideration under the current piece of research. (A total of 290 researches (149 Ph.D., 124 M.Phil. and 17 Projects) were studied).]

❒ 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.

1.11.4 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).

1.11.5 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.

1.12   FINDINGS

The Major findings are as follows —

For Objective —1

[1]   The Abstracts for a total of 290 studies including 149 Ph.D. studies, 124 M.Phil. Studies and 17 Research Projects were prepared.

For Objective —2

[2]   These 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.

For Objective —3

[3]   Out of total 24 research guides, 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.

[4]   Maximum number of research reports was found reported in English Language rather than Hindi Language.

[5]   Maximum studies used more than 300 pages for reporting the research.

[6]   The research becomes voluminous in terms of number of pages with the increase in the level of the research.

[7]   There was a satisfactory level of use of quality paper while reporting the researches. 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.

[8]   Binding quality of the Ph.D., M.Phil. and Project research reports were found not up to of satisfactory level. 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.

[9]   At the Ph.D. and M.Phil. level the preparation of the Index was found at the satisfactory level but no at the Project level.

[10]   No uniformity in the number of the chapters reported in the research reports at the different levels of research

[11]   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'.

[12]   As far as the Major area of research was concerned, at all levels of research i.e. Ph.D., M.Phil. and Project, the area of ET/ICT was found to be dominating.

[13]   Top four Minor area of research was found to be 'Teacher Education', 'Psychology of education', 'Correlates of Education' and 'Organization, Administration and Management'.

[14]   As far as the Minor area of research was concerned, Maximum studies were conducted in the area of 'Teacher Education' which emerges out as the most priority area among Teachers and researchers.

[15]   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' having less numbers of studies conducted.

[16]   It was found that the Majority of the researches were carried out at the Higher Education and Secondary Education level of Education as compare to that of Primary (Lower and Upper) and Higher Secondary level of Education.

[17]   Diversified School subjects and Teacher education subjects were taken up by the researches.

[18]   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.

[19]   It was found that researchers 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.

[20]   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.

[21]   There was Lack of reporting/reviewing the latest studies at all levels of research.

[22]   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

[23]   Component of 'Rationalization of Implications from the previous researches' was found good in Ph.D. researches while the situation was found to be paying some attention in the as far as M.Phil. and Project researches were concerned.

[24]   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.

[25]   Fundamental and Applied researches were given more attention while Action research, as kind of research, was totally neglected.

[26]   The trend of research with respect to the Nature of research indicates that the Qualitative research Methodology was found to be dominating Qualitative and Mixed methodological research throughout the years during 1964-2014.

[27]   Explanation of the Terms was found in almost researches but the Operationalization of Terms was found missing in maximum researches.

[28]   There was not a single Ph.D., M.Phil. or Project study in which was carried out using alternative Hypothesis only.

[29]   Formation of the Hypotheses of Null type was found dominated the other types of the hypotheses formation in the researches.

[30]   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.

[31]   Quasi-Experimental Design found dominating design among all Experimental Designs.

[32]   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; 'Pre-test Post-test Non-Equivalent Group design' and 'Post-test only Non-Equivalent Group Design' were found dominated at the M.Phil. level and 'Pre-test Post-test Non-Equivalent Group design' was found dominated at the Project level.

[33] In all decades during 19642014, there was a consistent dominance of taking geographical region 'Indore' as the sample in the researches at all levels of research.

[34] Only one study was found with the sample of the International level.

[35] There was a consistent dominance of taking '>=51 but <=100 ' and Size >=101 but <=200 size of the sample at M.Phil. and Project level.

[36] The sample size of '>=101 but <=200' and '>200' was more prevailed at Ph.D. level researches.

[37] There was a consistent dominance of taking Probabilistic Sampling techniques at all levels of research.

[38] Among different types of Probabilistic sampling techniques, the Simple Random Sampling technique consistently dominated in the researches.

[39] Among different types of the Non Probabilistic sampling techniques, the Purposive Sampling technique consistently dominated the researches.

[40] Both Standardized and Non-standardized tools were found used simultaneously at all levels of researches.

[41] 42.20 percent of researches was found using Self-Made tools.

[42] 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.

[43] On an Average three numbers of tools were used in maximum researches.

[44] 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.

[45] 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).

[46] Eight is the maximum number of tools used in three projects.

[47] 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.

[48] Too much old tools were found in use which should be updated in terms of the Norms and Standards.

[49] Parametric statistics dominated the data analysis techniques among the researches

[50] Descriptive statistics were used by almost all the researchers.

[51] Non-parametric Statistical techniques were not exploited properly.

[52] 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.

[53] 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 lack of statistical knowledge and competency.

[54] 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.

[55] 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 Vishwavidyalya, Indore.

[56] major Qualitative Data Analysis techniques like Triangulation, Inductive Analysis, Deductive Analysis, Data Displaying, and Creative Synthesis were not used at any level of Research.

[57] During 1964-2004 there was a Mixed (APA and MLA) style of referencing dominating the style of referencing in researches.

[58] Use of APA style of referencing gradually increased in from 1964-2014 in researches.

[59] Researches had followed the traditional institutional referencing style which does not have any uniform format of referencing.

[60]   The art of writing of other techniques like In-text citation, Bibliography, Annotated Bibliography and Webliography in the researches was strongly felt.

[61]   The skill of writing the referencing styles properly and as per the standards of the referencing style was exhaustively missing.

[62]   Skill of writing the foot/Endnotes as referencing styles were missing in the researches.

[63]   Skill of drawing legible and proper tables in the research was not up to a satisfactory level.

[64]   Skill of drawing legible and proper graphs in the research was not up to a satisfactory level.

[65]   Considering all the three levels of research (Ph.D., M.Phil. and Project) maximum outputs were found related to 'Instructional Materials' i.e. 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 'Institutional Materials' and conducting 'Survey' dominated the researches.

[66]   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. The 'Instructional Strategies' and 'Survey reports' were found to be the second and third most popular areas respectively as far as research output was concerned.

[67]   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.

[68]   At the Project level, 'Models of teaching' was found to be the second most preferred area as far as the research output was concerned.

For Objective —4

[69] 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 .

[70] A total of 231 Independent and 243 Dependent variables were identified and studied under the process of synthesize the findings of the Educational researches.

[71] 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.

[72] 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)'.

[73] 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'.

[74] 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.

[75] 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 synthesize research findings.

[76] 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'.

[77] There was a significant positive effect of previous class Achievement on the current Achievement.

[78] Achievement in Numerical ability positively impacts the overall Achievement.

[79] 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.

[80] The achievement was not found to have a significant effect on Creativity and Teaching Competency.

[81] Achievement Motivation positively impacts Achievement in 3 studies but it negatively impacts the Aggressive behavior in one study.

[82] Achievement Motivation was not found to have a significant effect on Teaching Competency.

[83] 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.

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

[85] No effect of Adjustment was on Achievement, Self Concept, Reasoning Abilities, Growth needs, Deficiency Needs, Stress, Anxiety, and Psychological Problems.

[86] The relationship of adjustment with achievement was found significantly negative in one study.

[87] The significant positive effect of Coaching in school was found on achievement.

[88]   The significant positive effect of Curriculum design was found on communication skills.

[89]   The significant positive effect of Guidance counseling practices was found on achievement, Reactions and classroom climate.

[90]   The significant positive effect of Management of school was found on self-confidence and stress.

[91]   The significant positive effect of Mid-day meal under SSA was found on students as their reactions were found more positive.

[92]   The significant positive effect of the Nature of school was found on catering deficiency needs.

[93]   The significant positive effect of Role commitment was found on job satisfaction.

[94]   The significant positive effect of the School board was found on self-confidence.

[95]   Seniority affects job satisfaction in a significantly positive way.

[96]   The significant positive effect of Time-space management system was found in terms of reactions.

[97]   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).

[98]   A Significant positive effect of Study conditions was found on achievement.

[99]   School Organization Climate was found a positive effect on Creativity and Adjustment.

[100]   Employed as Government -Non-Government Teachers had no significant effect on Adjustment, Aptitude (Professional) and Teaching Behavior.

[101]   Guidance Counseling Practices had no significant effect on Intelligence.

[102]   Management of School had no significant effect on Anxiety.

[103]   Nature of School had no significant effect on Growth Needs, Motivational Need and Role Commitment.

[104]   Non-Formal Education holders had no significant effect on Attitude towards Non-Formal Education.

[105]   Teaching Experience, Smartness, Qualification, Regularity, Resignation, and Type of Profession do not have any significant effect on Achievement.

[106]   School Board does not have any effect on Anxiety.

[107] School Organization Climate had no significant effect on Originality.

[108] Teaching Experience had no significant effect on Achievement, Adjustment, and Attitude towards Teaching, Reactions, and Teaching Effectiveness.

[109] Teaching Position had no significant effect on Adjustment, Teaching Position-Attitude towards Teaching, Teaching Effectiveness.

[110] Trained/Untrained teachers had no significant effect on Job Satisfaction, Role Commitment.

[111] Type of School had no significant effect on Aggressive Behavior, Creativity, Originality, and Self-concept.

[112] Position in Administration did not have any significant effect on Time Management Awareness.

[113] Course done in Distance/regular mode did not have any effect on Teaching Competency.

[114] Type of School board did not have any significant effect on stress.

[115] Type of school did not have any significant effect on adjustment, self-concept, and values (national integration).

[116] Less number of studies were undertaken with the pair of 'Attitude' as an independent variable with other dependent variables.

[117] Attitude had a significant positive effect on Achievement, Conformity Behavior of the students and Time Management Competency.

[118] Attitude towards teaching was found to be a significant positive effect on Teaching (successfulness).

[119] Humor attitude towards teaching was found to have a significant positive effect on Teaching (successfulness).

[120] Attitude had no effect on Teaching Competency, Reasoning and Time Management Awareness.

[121] 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.

[122] An individual's literacy of computers was found to have a significant positive effect on General Mental Abilities.

[123] Computer software (s) (like GOOTI and others few) were found no effect on Achievement and Reactions.

[124] The newspaper was found a significant positive effect on Child education.

[125] Computer Awareness was found to had no significant effect on Achievement, Attitude towards Science and Reasoning

[126] 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.

[127] Verbal Creativity had a significant positive relationship with Non-Verbal Creativity.

[128] Creativity was found to have a significant negative effect on Adjustment, Attitude and Conformity Behaviour of the Students.

[129] Creativity was found to have no significant effect on Psychological Problems, Vocational Guidance Need and Fluency.

[130] There was a significant positive effect of age on teaching competency.

[131] There was a Neutral effect of Age on Achievement.

[132] There was no conclusion of age on Adjustment, Aggressive Behavior, Interest, Teaching Behavior, and Values.

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

[134] Class had a positive effect on creativity.

[135] Caste had a significant positive effect on Achievement, Attitude, Creativity, and Intelligence.

[136] 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.

[137] 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.

[138] 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.

[139] 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).

[140] 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).

[141] In one study gender was found negatively affecting the achievement.

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

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

[144] Marital status was found a significant positive effect on Creativity and Achievement.

[145]   There was no effect of Marital status on Adjustment, Job satisfaction.

[146]   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).

[147]   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

[148]   Students' background had no effect on Adjustment, Intelligence, and Locus Of Control

[149]   Religion had no effect on creativity and personality

[150]   Belongingness to the tribal or non-tribal region did not have any effect on Values (Democratic).

[151]   Type of family does not have any effect on Time Management Competency and Time Management Awareness.

[152]   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.

[153]   The level of parent education had a significant positive effect on Moral Concept Development.

[154]   Mother Academic qualification had a significant positive effect on Moral Concept Development.

[155]   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, Vocational Guidance Need.

[156]   The level of parent education had no significant effect on Self Concept.

[157]   Education level had no significant effect on Adjustment and Job Satisfaction.

[158]   Math/Non Math background had no significant effect on Achievement

[159]   Dependency was found to have a significant effect on Aptitude (professional).

[160] Dependency was found no significant effect on Creativity, Flexibility, Achievement, Self Assessment, Adjustment, Aptitude, Risk-Taking Capacity, Teaching Behavior and Value (Curiosity).

[161] Educational Television (Countrywide Classrooms) was found to have a significant effect on Achievement, Reactions, Attitude, and Self Assessment.

[162] No significant effect of Educational Television (Countrywide Classrooms) was found on Frustration level.

[163] Talkback mode was found to be more effective than without talk-back mode/direct mode.

[164] The interactive mode was found to be more effective than the simulated talk-back, Talk-back and Direct Mode.

[165] The live mode was more effective than the interactive mode in one of study

[166] A significant positive effect of Talk-Back Mode was found on Achievement

[167] A significant positive effect of Direct Mode was found on Achievement.

[168] No significant effect of Mode of ETV (Direct Mode, Interactive mode and Simulated Talk-back mode) on Habitat, Medium was found.

[169] No significant effect of With & Without Talkback on Achievement was found

[170] No significant effect of With Interactive& Without Talkback on Achievement

[171] Radio Broadcast programs were found to have no significant effect on Achievement.

[172] Radio Broadcast programs were found to have a significant effect on reactions.

[173] 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.

[174] 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).

[175] Teaching using Instructional material was found to be better than teaching using Selective Concept attainment model and Inquiry Training model (ITM)

[176] The instructional material was found significantly better than the traditional method.

[177] Instructional material in the form of Program Learning material was found to be better than the traditional method.

[178] 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

[179] 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

[180] Need Base Learning Program has been found significantly positively effective on Achievement, Attitude Toward Teaching, and Personality

[181] Teaching strategy using (Demonstration Approach) has been found significantly positively effective on Creativity and Achievement

[182] Teaching Techniques Applied has been found significantly positively effective on Teaching Competency

[183] 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

[184] 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.

[185] Teaching Strategy was not found effective on Achievement (Model Competency)

[186] The training was not found effective on Attitude Of The Subject Towards Pupils, Teaching Profession

[187] Teaching strategy (Demonstration Approach) was not found effective in Teaching Competency

[188] In one study the reactions towards Instructional Strategy were found to be significantly negative.

[189] The effect of Instructional strategy on higher mental abilities was found to be inconclusive.

[190] 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)

[191] 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.

[192] Intelligence was found to have an inconclusive effect on Attitude towards science and Reasoning.

[193] In one study Intelligence was found to have been a significantly negative effect on Achievement.

[194] There was a significant positive effect of the Level of Aspiration on Socio-Economic Status.

[195] There was a significant negative effect of the Level of Aspiration on Achievement.

[196] There was no effect of level of aspiration on Aggressive Behavior and Vocational Guidance Need.

[197] Locus of Control was having a significant positive effect on the Self-concept.

[198] There was no significant effect of Locus of Control on Achievement and Creativity.

[199] Cognitive Emotional and Behavioral Loud Reading has been found to have a significant positive effect on Teaching Competency

[200] Concept Formation has been found to have a significant positive effect on Achievement

[201] The demonstration has been found to have a significant positive effect on Traditional Method

[202] Dialogue Method has been found to have a significant positive effect on Achievement, Discipline, Discussion Viewing, Reactions

[203] Dialogue Method was found significantly superior to the Traditional Method

[204] Discussion Participating has been found to have a significant positive effect on Aspiration, Discussion Viewing, Interest, Kindness, Reactions, Value Judgment

[205] Discussion Viewing has been found to have a significant positive effect on Interest, Kindness, Reactions and Value Judgment

[206] Experimental Method has been found to have a significant positive effect on Attitude Science and Reactions

[207] Method (Activity) has been found to have a significant positive effect on Achievement and Reactions

[208] Method (Lab Method) has been found to have a significant positive effect on Achievement

[209] Method (Set Induction) has been found to have a significant positive effect on Achievement and

[210] Set Induction method was found to be more effective than the Traditional Method

[211] Traditional Method has been found to have a significant positive effect on Attitude, Self Concept, and Self Confidence

[212] Use of Assignment has been found to have a significant positive effect on Achievement

[213] Value Analysis method (VAM) Treatment duration has been found to have a significant positive effect on Moral Judgment

[214] Cognitive Styles has been found to have no significant effect on Achievement and Creativity

[215] Dialogue Method has been found to have no significant effect on Creativity and Dedication towards Teaching

[216] Interactive session has been found to have no significant effect on Achievement

[217] Laboratory Competency has been found to have no significant effect on Achievement

[218] 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.

[219] In one study Experimental method found to have no significant effect on Achievement.

[220] In one study Traditional method was found to have no significant effect on Achievement.

[221] 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 Feed backers Behaviors, Overall Social-Emotional, Personality, Reactions, Self Assessment, Skill (Criticizing), Skill (Lecturing), Social Emotional Climate, Teaching Effectiveness, Traditional Method, Use of Teaching Skills

[222] Micro Teaching with Perceptual Modeling has a significant positive effect on Teaching Competency

[223] 'No Feedback' has been found a significant effect on the Use of Teaching Skills

[224] Feedback Mechanism System has been found no significant effect on Giving Direction, Adjustment, Ask Question, Attitude Toward Teaching, Idea Accept, Overall Types Of Feedback

[225] Feedback has been found no significant effect on Achievement, Teaching Competency

[226] Micro Teaching with Audio Modeling has been found no significant effect on Teaching Competency,

[227] Teaching with Perceptual Modeling has been found no significant effect on Micro Teaching With Audio Modeling

[228] Micro Teaching with Perceptual Modeling has been found no significant effect on Micro Teaching with Symbolic Modeling

[229] Micro Teaching with Symbolic Modeling has been found no significant effect on Micro Teaching with Perceptual Modeling

[230] Micro Teaching with Symbolic Modeling has been found no significant effect on Teaching Competency

[231] Micro Teaching has been found no significant effect on Reactions

[232] No Feedback has been found no significant effect on Personality

[233] Simulation Real Class has been found no significant effect on Rating

[234] Simulation has been found no significant effect on Teaching Competency

[235] Simulation Real Class was found to have no effect on the Rating of Holistic teaching

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

[237] 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.

[238] The advance Organizer model was found to be more effective than teaching using Program Learning Material.

[239] Advance Organizer Model (AOM) was found to be a significant positive effect and found not effective on Delayed Retention in one–one studies each.

[240] 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.

[241] Advance Organizer model was found to be equally effective to Set Induction Method

[242] Partistic Demo Approach using Advance Organizer Model was found to have a positive significant effect on Understanding about Advance Organizer Model (AOM)

[243] Partistic Demo Approach using Advance Organizer Model was found to have a significant positive effect on the Wholistic Demonstration of teaching.

[244] Wholistic Demo Approach using Advance Organizer Model was found to have no significant effect on Understanding about Advance Organizer Model (AOM)

[245] Concept Attainment model was found to be a significant positive effect on Achievement, Attitude, Intelligence, Personality, Reactions, Reasoning, Self Confidence, and Teaching Competency

[246] 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.

[247] Reactions towards the use of RCAM were found to be negative in one of the studies.

[248] In two studies the reactions towards the use of Concept Attainment model were found to be significantly negative.

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

[250] Cognitive Growth Moral Development model of teaching has been found not significantly effective on Attitude towards Science, Successive Seriation, Reading Skills and Relative Seriation.

[251] 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.

[252] Inductive Thinking Model was found to be a significant positive effect on Achievement, Teaching Competency, Reactions, Creativity, and Intelligence.

[253] Inductive Thinking Model was found to be significantly better than the Traditional Method.

[254] Receptive Inductive Thinking Model (RITM) was found to have negative Reactions in three studies.

[255] The Inquiry thinking model was found to have no effect and positive effect on Higher Mental Ability in the one-one study each.

[256] Teaching using inquiry training model was found to be a significant positive effect on Achievement, Creativity and Problem Solving Ability.

[257]   Teaching using Inquiry Training Model was found to be significantly effective than the Traditional Method.

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

[259]   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).

[260]   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.

[261]   Teaching using Memory Model was found to have a significant positive effect on Achievement, Reactions, and Intelligence

[262]   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.

[263]   Teaching using Memory Model was found to have no significant effect on Achievement.

[264]   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

[265]   Teaching using Synectics Model (SM) and Tree Instructional Method (TIM) was found to have a significant positive effect on Achievement

[266]   Teaching using Synectics Model (SM) and Tree Instructional Method (TIM) was found to have no significant effect on Self Concept.

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

[268]   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.

[269] Teaching using Value Analysis Model (VAM) was found to have no significant effect on Originality, value (perseverance), Value (cooperation) and Value (nationalism).

[270] 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.

[271] 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.

[272] Teaching using Value Analysis Model (VAM) was found to have no effect on Reasoning, Value (Cooperation) and Value (Judgment).

[273] Mini Teaching Integration Model was found to have a significant positive effect on Teaching Competency

[274] Piagetian Teaching Model was found to have a significant positive effect on Achievement and Reactions.

[275] 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.

[276] Non-Directive Model was found to have no significant effect on Achievement and Intelligence

[277] 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)

[278] 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.

[279] In one study personality was found to have a significant negative effect on Achievement.

[280] 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.

[281] Perception has been found to have a significant positive effect on Critical Thinking and Teaching Competency.

[282] Peer Perception has been found no effect on Commitment to Profession, Professional Growth, Relation with Head, Relation with Students and Teaching Effectiveness

[283] Perception has been found no effect on Achievement, Commitment to Profession, Evaluation of Lesson, Relation with Head, Relation with Students and Teaching Techniques Applied.

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

[285] Clerical Speed and Accuracy was found a significantly positive effect on Achievement.

[286] Space Relation Scores were found a significantly positive effect on Achievement.

[287] No significant effect of reasoning skills was found on Achievement, Vocational Guidance Need, Model Competency achievement, and Creativity.

[288] There was no effect of Space Relation Scores on Vocational Guidance Needs.

[289] 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.

[290] Self Concept has been found a significant positive effect on Caste, Growth Needs, Motivational Need and Values (National Integration)

[291] 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

[292] Self-esteem has been found no significant effect on Achievement, Vocational guidance need

[293] Self-confidence has been found to have no significant effect on Achievement, Creativity, Originality, Reasoning, Value (Curiosity) and Vocational Guidance Need.

[294] The self-concept has been found to have no significant effect on Achievement, Flexibility, Creativity, Adjustment, Personality, Risk-Taking Capacity, and Self Confidence

[295] Tolerance of Ambiguity has been found no significant effect on Creativity, Flexibility, Originality, Risk-Taking Capacity and Achievement.

[296] Direct Behaviour has been found a significant positive effect on Choosing Stream.

[297] The trend has been found a significant positive effect on Teaching Competency.

[298] Interest has been found no significant effect on Profession Preference, Teaching Competency.

[299] Aggression has been found no significant effect on Achievement.

[300] Aspiration has been found no significant effect on Adjustment.

[301] Ambiguity has been found no significant effect on Creativity.

[302] Motivation has been found no significant effect on Time Management Competency and Time Management awareness.

[303] Concentration has been found a significant positive effect on Skill (Listening)

[304] Skill (Social) has been found a significant positive effect on Achievement

[305] Discipline has been found a significant positive effect on Teaching (Successfulness)

[306] Leadership Quality In Teaching has been found a significant positive effect on Teaching (Successfulness)

[307] Teaching Competency has been found a significant positive effect on Achievement

[308] Aptitude has been found a significant positive effect on Adjustment and Teaching Behavior.

[309] Aptitude has been found no significant effect on Achievement and Teaching Effectiveness

[310] Grade has been found no significant effect on Reading Skills

[311] Problem Solving Abilities has been found no significant effect on Personality

[312] Problem Solving Abilities has been found a significant positive effect on Achievement, Intelligence, and Creativity

[313] Skill (Reading) has been found no significant effect on Achievement and Teaching Skills

[314] Study Habits has been found no significant effect on Achievement, Creativity, Reading Skills, Reasoning, and Creativity

[315] Teaching Competency has been found no significant effect on Direct Behavior and Indirect Behavior In Stream.

[316] Skills (reading) were found to have no significant effect on Reasoning.

[317] Diagnostic Test has been found a significant positive effect on locating Errors in the learning of Sanskrit and identifying Common distracters.

[318] Difficulty Value has been found a significant positive effect on Self Assessment.

[319] Discriminative Index has been found a significant positive effect on Self Assessment.

[320] Distracters have been found a significant positive effect on Item Difficulty.

[321] Multiple Discriminative types Items (MDTI) has been found a significant positive effect on Distracters.

[322] Dilemma Questions have been found significant positive effect on Moral Concept Development.

[323] Remedial Teaching has been found a significant positive effect on Achievement, Error Location, Intelligence, and Reactions.

[324] Testing Time has been found a significant positive effect on Achievement.

[325] 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

[326] Testing has been found no significant effect on Value Clarifying Factor.

[327] Optical devices were found to be positively affecting Reading skills.

[328] Audio-Visual aids were found to have a positive effect on Achievement

[329] Teaching-learning materials prepared by teachers were found to have a significant positive effect on the Achievement.

[330] Curiosity had been found a significant positive effect on Achievement.

[331] Value Judgement was found to have a significant positive effect on Value Judgement.

[332] Vocational Maturity was found to have a significant positive effect on Job Satisfaction.

[333] Meditation had been found a significant positive effect on Reactions.

[334] Cooperation was found to have no significant effect on Adjustment, Intelligence, and Personality.

[335] Cooperation was found to have no significant effect on Personality.

[336] Discipline was found to have no significant effect on Adjustment, Attitude toward Teaching, Teaching Effectiveness.

[337] Grade was found to have no significant effect on Values (Democratic).

[338] Risk-Taking Behaviour had been found no significant effect on Originality, Value (Curiosity) and Creativity.

[339] Social Maturity was found to have no significant effect on Achievement.

[340] Socio Characteristics was found to have no significant effect on Value (Curiosity) and Creativity.

[341] Values were found to have no significant effect on Time Management Competency and Time Management awareness and Role Commitment.

[342] Frustration was found to have no significant effect on Role Commitment.

[343] Values were found to have no significant effect on Role Commitment.

1.13   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.

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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), Eğmir, Erdem and and Koçyiğit (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), Eğmir, Erdem and and Koçyiğit (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 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 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 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 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 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.

1.14   IMPLICATIONS

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.

1.14.1 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.

1.14.2 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.

1.14.3 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.

1.14.4 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.

1.14.5 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

1.14.6 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.

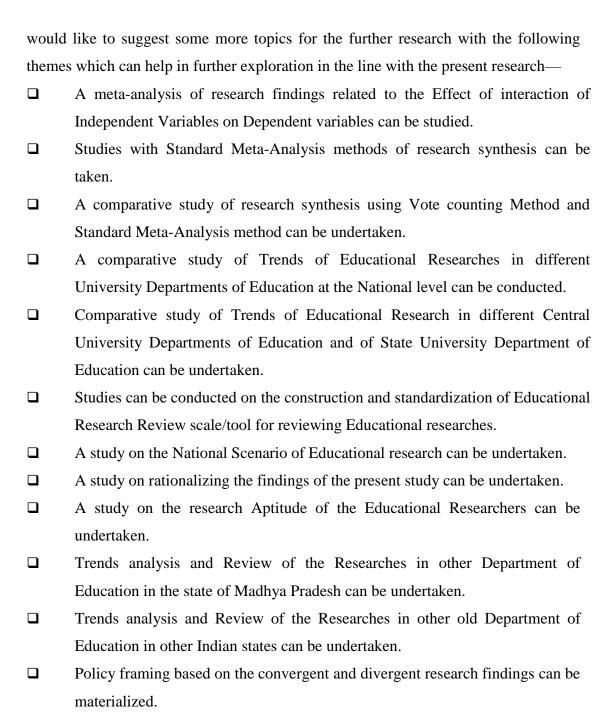### 1.14.7 IMPLICATIONS FROM RESEARCH SYNTHESIS

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 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, 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.*

1.15 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 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.

1.16   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 system 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, comprehendible, and decision-making realty.

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.