Analysis of Doctoral Researches in Education in the University Of Calicut from 1988 to 2009

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Analysis of Doctoral Researches in Education in the University Of Calicut from 1988 to 2009

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Abstract

This study categorize the thrust areas of doctoral researches in education in University of Calicut from 1988 to 2009 in terms of (a) Areas of educational research carried out, (b) Variables studied, (c), Method of research employed and (d) Method of analysis used, and pinpoint the gaps existing in the research areas, in topics and variables taken up for doctoral research. Conclusions are drawn and implications are added.

Introduction

Educational research is undertaken in the various departments of the Universities, Colleges of Education and the National institutes as well as Research institutes at the state level. The fact however remains that Research at Ph.D. level forms the bulk of Educational Research in India. During this decade, a large number of Ph.D. theses in Education have been approved by the Indian Universities. The University of Calicut is the largest University in Kerala. Established in the year 1968, it is the second university to be set up in Kerala. The University aims to nurture excellence in education and research in its catchment areas of Northern Kerala, historically consigned to the periphery of Kerala's academic map. Department of Education established in 1974, offers post graduate and Doctoral courses in Education. In the Department of Education, University of Calicut awarded 125 Doctoral Researches from 1980 August to 2012 September. In this university, Doctoral studies in education started in 1980 with "a comparative study of certain personality variables related to over normal and under achievement in secondary school Mathematics" by Somasundaran. M, guided and supervised by Dr. C.L. Anand.

Need and Significance

All Researchers spend several years writing Doctoral theses. These years must be highly productive and efficient in both research and writing. The findings of these Doctoral theses should help to plan education for the upliftment of the society and to take adequate steps for the enrichment of educational programmes. Unfortunately literature on doctoral researches suggests that only few reads the

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theses seriously and even fewer people practices the suggestions and implications contained in them. These theses are seriously attended by the researchers of next generation and their guides only. The present study is helpful to indicate the direction for future research. It is useful not only to the researcher but also the educational practitioners at all level especially those who relate to schools education. A careful study of implications of research findings and their application to the classroom practices would help to modify the teaching behavior and make it more effective. A met-analytic review of doctoral researches in this region of the state will provide guidelines to select research problem on priority basis**;** help to get acquainted about the topics of research in education in which the maximum research is done and where gaps ; will provide instant information about a wide range of theses in short period of time and thereby save the time of the researchers; will reveal the trends and variables in the educational research over the period of time and to better know how about the various tools and statistical techniques used in the researches.

Objectives

This study is to categorize the thrust areas of doctoral researches in education in University of Calicut in terms of (a) Areas of educational research carried out, (b) Variables studied, (c), Method of research employed and (d) Method of analysis used, and pinpoint the gaps existing in the research areas, if any, in topics and variables taken up for doctoral research.

Methodology

Before trying to trace growth under individual area, it should be worthwhile to gain an overall understanding of the quantum of research completed across different areas. Analysis of 51 Doctoral Researches submitted to the University of Calicut through Department of Education, University of Calicut from the period 1988 to 2009 were selected through random sampling out of 125 Doctoral Researches that were submitted in the department of education, University of Calicut. There were 68 male and 57 female Doctoral Researchers. In the 51 Doctoral researches sampled there are 29 male and 22 female researchers.

Thrust Areas of Doctoral Researches in Education in University Of Calicut 1988-2009

This would also help assess the extent of attention paid by the researchers to various dimensions of education and identify the inter area disparities in coverage. There is no one ideal way of classifying the studies in to different areas that would be universally acceptable. The major categories of researches in education during the period 1988-2009 are summarized in table 1.

Area of doctoral researches in education in the University of Calicut during 1988-2009

Area of the study	Nos.	Area of the study	Nos.
		Method of teaching	1
Teachers	6	Models of teaching	1
curriculum	3	Strategies of teaching English	1
Teacher education programme	3		
Art education programme	1	Nursery	2
SC/ ST	2	Primary	2
		Upper primary	4
		Secondary school pupils	30

Most of the studies in education in the University of Calicut are conducted on secondary school pupils.

Another way to identify the thrust area of researches is to classify the dependent variables studied by them.

Dependent Variables studied by doctoral dissertations in education 1988-2009

Achievement 18	Cognitive variables(7)
Achievement related variables(7)	Legislative thinking style1
Retention 3	Intelligence 2
Process outcomes in science1	Dimensions of cognitive ability2
Language skills1	Creativity 2
Reading comprehension 1	**Teacher and teacher education (12)**
Errors in written Sanskrit1	Teacher effectiveness2
Motivation and adjustment (2)	Teacher aptitude1
Scholastic motivation 1	Burn out in teachers 1
School adjustment 1	Perceived stress of teachers1
Affective outcome, values and curriculum (3)	Perceived teaching competence1
Affective ability1	Observed teaching competence1
Effectiveness of social science curriculum1	Job satisfaction 3
Values in secondary school pupils 1	Professional efficiency1

Role conflict1

The most studied dependent variable is achievement. In 18 studies in which achievement is studied as independent variable, 7 achievement related variables studied are retention, process outcomes in science, language skills, reading comprehension, errors in written Sanskrit. Altogether achievement and related outcomes is studied by half the doctoral researches in education. Cognitive outcomes other than achievement are studied by another seven researches. The second area of thrust, after the achievement and cognitive outcomes is teacher and teacher efficiency. Together there are 12 studies in this area. Hence the thrust of educational research in university of Calicut is achievement and related cognitive outcomes followed by teacher and teacher preparation, especially of secondary education. Pre-primary and primary education, which takes the attention at national level, is yet to gain attention in this university. Likewise, the education of affective domain, and its measurement, social out-comes of education, history of education are also yet to gain researchers in education at local level.

Independent variables studied by doctoral researches in education

Independent variables studied by doctoral researches sampled for the study include learner related, school related and home related variables (Figure 1).

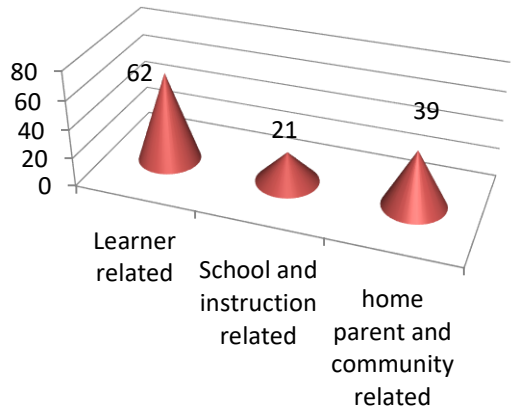

Figure 1: *Frequency of Learner Related, School Related and Home Related Independent Variables Studied In Researches in Education 1988-2009*

Equal thrust is received on attention to learner and his home factors influencing educational outcomes; the institutional and process variables are yet to attain their due in educational researches. This may be because of the practical difficulties for arranging for the required data in valid ways.

Learner related independent variables

The learner related variables are classified into cognitive and personality variables.

Learner related Independent variable studied by doctoral researches in education1988-2009

	Frequency		Frequency
Achievement motivation	**11**	**Personality Variables (22)**	
Level of aspiration	1	Personality	4
Academic achievement	1	Self-reliance	1
Creativity	4	Extraversion	1
Intelligence	4	Sense of personal worth	1
Language aptitude	1		
Cognitive entry behavior (Nonverbal intelligence & verbal intelligence)	1	Feeling of belongingness	1
Self-concept	8	Withdrawing tendencies	1
Gender	2	Nervous symptoms	1
Attitudes (12)		Social standards	1
Attitude Towards English	1	Social skills	1
Attitude Towards English teachers& Teaching	1	School relation	1
Attitude towards education	1	Anti - social tendencies	1
Attitude towards Mathematics	3	Examination anxiety	1
Attitude towards problem solving	1	Family relations	1
Attitude towards Malayalam	1	Community relations	1
Attitude towards academic work	1	Total social adjustment	1
Attitude towards teaching profession	2	Total socio- personal adjustment	1
Attitude towards integrated education programme	1	Introversion-Extroversion	1
Styles and approaches (8)		Adjustment	1
Approaches to studying	4	Total personal adjustment	1
Cognitive style	3	**Mathematics related (Miscellaneous 9)**	
Learning style	1	16 Psychological	1

variables related to Mathematics	
Mathematical anxiety	2
Mathematical Creativity	2
Mathematical interest	2
Problem solving skills in Mathematics	2

School and instruction related Independent variables studied by doctoral researches in education 1988-2009

	Frequency		
Instructional strategies	**19**		
Instructional learning strategies (Cooperative learning strategy which is integrated with peer - teaching strategy, i)	1	Instructional learning strategies (Cooperative learning-Jigsaw II Model.)	1
Direct instruction model	1	**Teacher personality (2)**	
Objective based instruction	1	Job satisfaction	1
Newly developed instructional Strategy	1	Satisfaction of teaching Physical science	1
Instructional procedure	2		
Grammar- Translation method of teaching	1		
Class room climate	5		
Concept attainment model of teaching	1		

Home and parent related Independent variables studied by doctoral researches in education 1988-2009

	Frequency		Frequency
Parental variables(33)		**SES variables (10)**	
Parental involvement	2	Social familial index	1
Parental education level	2	Socio economic status	3
Parental occupation level	1	Social position	1
Parental income level	2	Socio familial variables	2
Parental acceptance	1	Fathers employment	1
Parental aspirations	1	Total socio- familial status	1
Parental attention	1	Father and Mother education	1
Parental encouragement	1	Level of educational	1

		advancement of geographic area	
Parental guidance	1	**Family Variables**	
Parental influence	1	Familial acceptance of education	2
Parental decision making	1	Family cultural level	2
Parental provision of physical facilities	1	Family environmental index	1
Parental care to physical fitness of child	1	Home practice for Mathematics	1
Family relation	1	Home environment for Mathematics	1
School relation	1	Home learning facility	2
Parental absenteeism	1	Family size	2
Fathers absenteeism	1		
Mothers absenteeism	1		

Control variables studied by doctoral researches in Education1988-2009

Another way of classifying the doctoral researches is to classify the control variable studied by them. Table 9 shows the frequency of researches on the identified control variables.

Table 7

Control variables and basal Variables studied by doctoral researches in Education

Control Variable	**Frequency**	**Basal Variable**	**Frequency**
Intelligence	2	Sex	7
Non- verbal intelligence	5	Age	3
Verbal intelligence	3	Economic status of the pupil	1
Age	1	Locale	4
Sex	1	Type of management of the school	3
Residence	1	Marital status	2
Previous knowledge of the subject matter	2	Teaching experience	3
Previous knowledge of the subject matter measured by pre test	1	Educational qualifications	3
Previous knowledge	1	School climate	1
Socio – economic status	2		

Pre- test score 2

The investigator classified the variables in to extraneous and descriptive. In the doctoral researches initial status is extraneous and instructional technology awareness, in-service training are descriptive.

Method of study used in Doctoral Researches

Figure 2 shows method of study used in the Doctoral Researches sampled for this study.

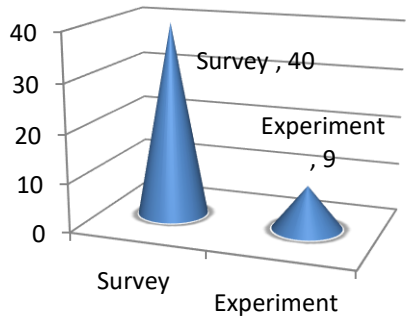

Figure 2: Method of study used in Doctoral Researches 1988-2009

In almost all the doctoral researches method of study is survey or experimental. There are 82 percent studies is in survey and 18 percent studies are experiment.

Tools Employed the Doctoral Researches in Education1988-2009

Doctoral researches were categorizes in terms of tools such as achievement test, tests, scale and inventory, Questionnaire and interview. The questionnaire and interview are also used by the researches. Most of them used newly prepared tools in their study. Only a few tools were re- used by subsequent researches. In the process of standardization of tools they followed the usual prescribed procedures like item analysis, findings of reliability and validity. Figure below shows the tools employed in the Doctoral Researches sampled for this study.

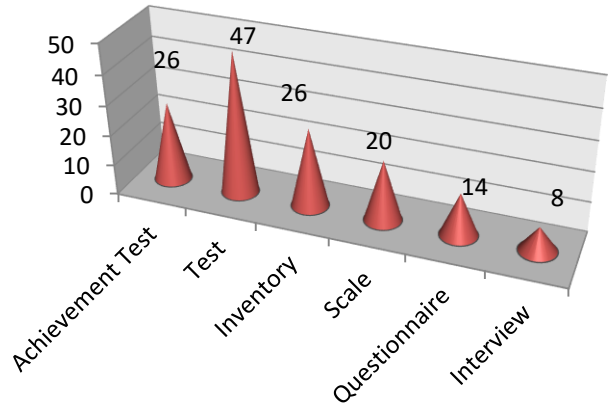

Figure 3: Types of Tools employed in the Doctoral Researches 1988-2009

Test is conducted in the doctoral researches is 33%. Achievement test is used in 19% , inventories are employed in 18%, scales are conducted in 14%, Questionnaire is employed in10% and 6% inventories are employed the doctoral researches. When compared to other tools questionnaire and interviews are less in usage.

The following is a list of the tools employed the doctoral researches in education sampled for the study.

Achievement tests

Mathematics

1. Generalized test of achievement in mathematics (Sumangala & Thampuratty (1992) (2)
2. Achievement test in Mathematics for Std X. (AncelMaria&Dr. SanthammaRaju.1998)
3. Test of Achievement in Mathematics(Mumthas. N.S),
4. Achievement test in Mathematics.(Showkathhussain 2002)
5. Achievement test in Mathematical skills (Pillai&Jayssree, 2001)
6. Achievement test in Mathematics,(Nicemol Sebastian)
7. Achievement test for the concept 'Decimals'
8. Achievement test for the concept 'Average',
9. Achievement test for the concept of 'Negative numbers'.

Biology

1. Achievement test in biology(Kumar,1992)

2. Achievement test in Biology-ATB (Koya, 2001).
3. Achievement test in Biology (Reshma.P.T2006)

Chemistry

1. A standardized Achievement test in Chemistry. (Ida Nancy. K & Santhamma Raju 1994)

Physics

1. Test of Achievement in Physics (K.M Santhakumari.1992)
2. Achievement test in Physics (Usha& Ampili, 2002).

Malayalam

1. The Kerala test of Malayalam achievement for Std. IX(Based on Bloom's taxonomy of the Cognitive & Affective domain)-M.Gulmohammed& SanthammaRaju.1995
2. Achievement test in Malayalam language skills (Pillai and Bindhu, 1997)
3. Generalised test of Achievement in Malayalam for secondary school pupils of Kerala(Kelu& Sainudheen1987)
4. Achievement test in Malayalam Language (ATML)-Sasidharan.P- Bloom (1979).
5. Achievement test in Malayalam (Showkathhussain 2002)

English

1. Achievement test in English.(K.P.Meera,1996)
2. Achievement test in English,(Showkathhussain 2002)

Social studies

1. Achievement test in Social science-ATSS (Kumar &Hameed, 2001)
2. Achievement test in Social Studies (Showkathhussain 2002)

General academic achievement test

1. General Academic Achievement test(for std VII pupils) Abdul Gafoor.K& Naseema.C,
2. Calicut University test of achievement in school subjects std IX.(AppanuNambiar 1998)

Tests other than achievement tests

1. Test of mathematics aptitude(Sumangala & Malini 1993)
2. Kerala University verbal group test of intelligence. (Appanu Nambiar 1988)
3. A test of listening comprehension in Malayalam for secondary school pupils of Kerala (P. Kelu, 1985)
4. Standard Progressive Matrices test(Raven,1958)
5. Group embedded figures test(Oltman et. ,all 1992)
7. Letter cancellation test.(Idanancy,SanthammaRaju.1994)
8. Language aptitude test.(K.P.Meera.1996)
9. Group embedded Figures test. (Oltman et al.(1971)
10. Letter cancellation test .Muthayya. (1960)
11. Kerala University Verbal Group Test of intelligence (Nair et al,1968)
12. Kerala University group test of verbal intelligence .(Pillai 1968)
13. Calicut University letter matrices test of intelligence (Nair 1984)
14. Comprehensive test of creativity for secondary school pupils (Sumangala 1987)
15. Test of numerical reasoning (Sumangala &Malini,1993)
16. Test of ability to use symbols (Sumnangala &Malini,1993)
17. Test of spatial ability (Sumangala &Malini, 1993)
18. Test of abstract reasoning (Sumangala & Malini, 1993)
19. Test of inductive reasoning (Mumthas. N.S)
20. Test of deductive reasoning (Mumthas. N.S)
21. Test of problem Solving ability in Mathematics (Sumangala & Vijayakumari,1996)
22. Test of Mathematical creativity (Sumangala,1993)
23. Verbal group test of intelligence (VGTI)- Kumar et, al.(1997)
24. Numerical ability test (Pillai & Jayasree, 2001)
25. Test of reading comprehension in English (Deepa.P)
26. Test of intelligence for secondary school pupils (Sumangala &Sholy,2000)
27. Comprehensive test of creativity (Sumangala, 1998)
28. Test of Mathematical creativity.(Nicemol Sebastian)
29. Verbal group test of intelligence (Reshma P.T)
30. Test of awareness on instructional Technology(Sumangala & Kumar 2005), information and in service training (Sumangala & Kumar, 2005)
31. Test of teacher aptitude (Sumangala and Usha, 2001)
32. Value identification test in social science, (N.K.Vijayan & Dr. T.C. Ayishabi, 2003)

33. value definition test for teachers, (N.K.Vijayan & Dr. T.C. Ayishabi, 2003)
34. Value definition test for students, (N.K.Vijayan & Dr. T.C. Ayishabi, 2003)
35. Value preference test (N.K.Vijayan & Dr. T.C. Ayishabi, 2003)
36. Test of process outcomes in science (TPOS)- Aruna, 1999.
37. Kerala University verbal group test of intelligence.
38. A test of reading comprehension in Malayalam for secondary school pupils of Kerala (P.Kelu,1985)
39. A comprehensive test of creativity for secondary school pupils.(Sumangala, 1987)
40. Generalised test of achievement in mathematics (Sumangala& Thampuratty 1992
41. Kerala University verbal group test of intelligence for adults.(Idanancy,SanthammaRaju.1994).
42. Kerala University Verbal Group Test of intelligence (Nair et al,1968)
43. Kerala University group test of verbal intelligence.(Pillai 1968)
44. Calicut University letter matrices test of intelligence (Nair 1984)
45. Verbal part of the Comprehensive test of creativity for secondary school pupils (Sumangala 1987)
46. Test of numerical reasoning (Sumangala &Malini, 1993)
47. Test of ability to use symbols (Sumnangala &Malini, 1993)
48. Test of spatial ability (Sumangala &Malini, 1993)
49. Test of abstract reasoning (Sumangala & Malini, 1993)
50. Test of inductive reasoning (Mumthas. N.S)
51. Test of deductive reasoning (Mumthas. N.S)
52. Test of problem Solving ability in Mathematics (Sumangala & Vijayakumari, 1996)
53. Verbal group test of intelligence (VGTI) - Kumar et, al. (1997)
54. Numerical ability test (Pillai & Jayasree, 2001)
55. Test of reading comprehension in English (Deepa.P)
56. Test of intelligence for secondary school pupils (Sumangala &Sholy,2000)
57. Comprehensive test of creativity (Sumangala, 1998)
58. Verbal group test of intelligence (Rehma P.T)
59. Test of awareness on instructional Technology, information and in service training(Sumangala & Kumar, 2005)
60. Divergent production ability test (Sharma, 1987).

Scales

1. Scale of attitude towards mathematics (Sumangala& Sunny 1987)

2. Scale of mathematics anxiety (Sumangala&Malini 1993)
3. Scale of self-concept in mathematics (Sumangala&Malini 1993
4. The Kerala socio-economic scale (Appanu Nambiar 1988)
5. The Kerala University handwriting scale for Malayalam (A.S. Nair, 1965)
6. Teaching competence Rating scale (Naseema)
7. General Teaching Competency Scale (Passi.B.K, Lalitha.M.S 1979)
8. Scale of attitude towards problem solving. (Pillai 1978)
9. Scale of social position. (Sumangala&Thampuratty.1992)
10. The Kerala examination anxiety scale. (Idanancy, SanthammaRaju.1994)
11. Kerala self-concept scale. (Idanancy, SanthammaRaju.1994)
12. Kerala scale of achievement motivation. Idanancy, Santhamma Raju.1994)
13. Kerala socio- economic scale (revised version -Idanancy, Santhamma Raju. 1994)
14. Kerala University test Anxiety scale. (M. Gulmohammed & SanthammaRaju.1995)
15. Kerala scale of achievement motivation. (M.Gulmohammed & SanthammaRaju.1995)
16. Kerala introversion-Extraversion scale. (M.Gulmohammed & SanthammaRaju.1995)
17. Kerala self -concept scale. (M.Gulmohammed&SanthammaRaju.1995)
18. Kerala socio personal adjustment scale. (M.Gulmohammed & SanthammaRaju.1995)
19. Rating scale on teaching competence for teachers, Dr. T.C. Ayishabi, Abdul gafoor. P.K
20. Scale of classroom climate. (K.M.Santhakumari.1992)
21. Scale of achievement Motivation. (Pillai&Salimkumar, 1992)
22. Scale of attitude towards English teachers & teaching. (K.P.Meera.1996)
23. Scale of attitude towards English. (K.P.Meera.1996)
24. Scale of attitude towards Education. (Pillai&Ayishabi.1983)
25. Scale of attitude towards Mathematics. Ancel Maria& Dr Santhamma Raju. (1998)
26. Scale of attitude towards Malayalam. (Sumangala & Ramesan 1991
27. Kerala Socio economic scale (modified) (Nair 1980)
28. Parental involvement Rating scale (PIRS) Abdul Gafoor.K & Naseema.C
29. Scale self - concept in Mathematics(Sumangala &Malini, 1996)
30. Scale of attitude towards Mathematics (Sumangala & Sunny,1987)
31. Scale of attitude towards academic work (Mumthas.N.S)
32. Scale of achievement motivation in Mathematics (Sumangala & Vijayakumari, 1996)
33. Scale of achievement motivation- SAM (Pillai& Kumar, 1993)
34. Scale of job satisfaction (Kumar & Kumar,2001)
35. Scale of Self- concept (Sumangala & Sujatha,1994)

36. Scale of attitude towards academic work(Sumangala & Mumthas, 1998)
37. Scale of self-concept (Sumangala &Kumari. 1994)
38. Scale of scholastic motivation (Usha &Ramakrihnan, 2002)
39. Scale of classroom climate (Usha & Sunitha, 1997)
40. Role conflict scale for women teachers (Sumangala &Ushadevi 2000)
41. Teaching success rating scale (Sumangala & Mathai, 1991)
42. Scale of attitude towards teaching profession (Pillai & Poozhikuth,1989)
43. Learning strategy scale (Rehma P.T)
44. Socio economic status scale.(Reshma. P.T)
45. Self-concept scale (Mohammedunni Alias Musthafa)
46. Attitude scale on integrated education programme for heads of schools, teachers.(Rasheed. K. Kiliyayil & Dr. C. Naseema)
47. Attitude scale on integrated education programme for Regular teachers & Resource teachers (Rasheed. K. Kiliyayil & Dr. C. Naseema)
48. Attitude scale on integrated education programme for hearing impaired children &Normal children.(Rasheed. K. Kiliyayil & Dr. C. Naseema)
49. Scale of attitude towards teaching profession(Mumthas & Hafsath, 2003)
50. Scale of teacher perception of teacher effectiveness(Sumangala & Kurian.T, 1994)
51. Self-concept scale for teachers(Pillai, 1989)
52. Teachers rating scale of students (N.K.Vijayan & Dr. T.C. Ayishabi, 2003)

53. Scale of classroom climate (SLC) - Usha & Aruna, 1999

Inventories

Adjustment

1. Malayalam version of Mangal Teacher Adjustment Inventory(translated by Haridasan.N.K prepared by Mangal1987)
2. Socio-familial adjustment inventory.(Idanancy,SanthammaRaju.1994)
3. School adjustment inventory (SAI) - Naseema&Usha (2002).

Study habits and approaches

1. Science studying approach inventory(Pillaietall, 92).
2. Study habits inventory.(Idanancy,SanthammaRaju.1994)
3. Studying approach inventory (Usha&Ampili, 2002)
4. Approaches to studying inventory-ASI (Kumar &Koya, 2001)
5. Learning style inventory-LSI (Kumar, et al., 1996).

Mathematics related to home & classroom environment

1. Classroom Environment Inventory for Mathematics. Ancel Maria & Dr. Santhamma Raju
2. Home Environment Inventory for Mathematics. Ancel Maria & Dr. SanthammaRaju. 1998
3. Home practice Inventory for Mathematics, Ancel Maria & Dr. SanthammaRaju. (1998).

Mathematics(interest)

1. Mathematics interest inventory(Sumangala and Vijayakumari, 1996)

Classroom

1. Classroom environment inventory (CEI)-Pillai&Sunitha, 199

Socio- familial

1. Socio- familial inventory (Nair &Devi 1982)
2. Socio-Familial inventory(ShowkathHussain2002)

Stress, Burnout and job satisfaction

1. Stress Inventory for Headmasters (SIH)-Abdul Kader Parambat& Dr. C Naseema
2. Stress Inventory for Headmasters (SIH)-Abdul Kader Parambat& Dr. C Naseema
3. Maslach Burnout Inventory(Maslach, Jackson Schwab1986)
4. Job satisfaction inventory (Indira. I. M 2004)
5. Job satisfaction inventory for teachers (Pillai, 1989)
6. Professional involvement inventory of school teachers (Sumangala, 1991)
7. Teaching interest inventory(Mumthas& Suja,2006),

Learning & Evaluation

1. Inventory for the evaluation of the primary school text books in Kerala for primary school teachers. (A. Unnikrishnan&Dr. P. Kelu),

Others

1. Extraversion inventory (Deepa. P),

2. Parental involvement inventory (Usha&Kuruvila, 1999)

Achievement tests employed in Doctoral Researches in Education

Figure 4 shows the achievement test employed in Maths, Biology, Chemistry, Physics, Malayalam, English, Social Studies and also the General Academic Achievement test.

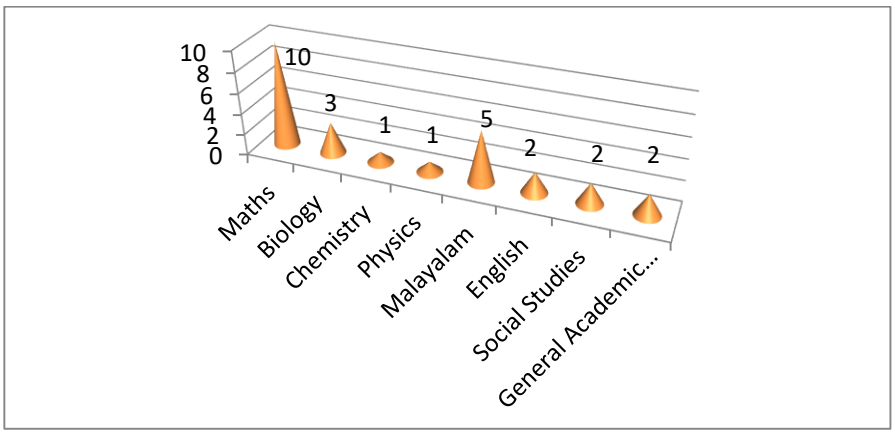

Figure 4: Achievement test employed in different Subjects In the doctoral Researches 1988-2009

Another way of classifying the tools used in doctoral dissertations is to categorize the Tests employed in the researches sampled for the study. The aptitude tests, value tests, creativity tests, verbal group tests, intelligence tests, reasoning, ability tests and other tests are employed the Doctoral Researches sampled for this study.

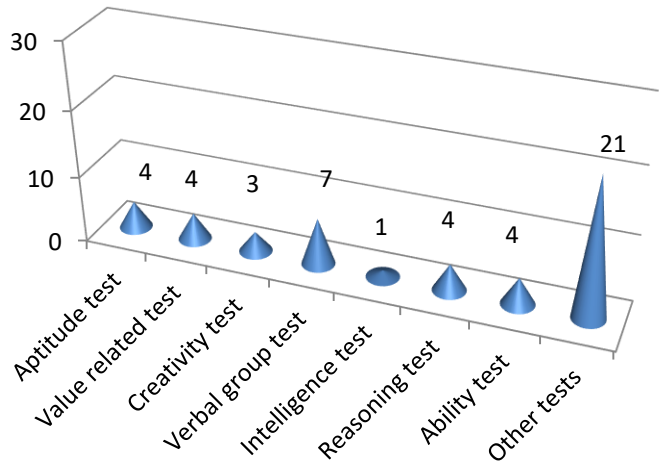

Figure 5 Tests employed the doctoral researches in education 1988-2009

Other tests employed in the doctoral researches in education

Tests	Frequency
Group embedded figures test (Oltman et, al 1971)	3
Group embedded figures test (Oltman et, al 1992)	3
Letter cancellation test (Muthayya 1960)	1
Letter cancellation test (Idanancy&SanthammaRaju 1994)	1
Calicut university letter matrices test of intelligence (Nair 1984)	1
Standard progressive matrices test (Raven 1958)	9
Test of process outcomes in science(TPOS) Aruna (1999)	1
A test of listening comprehension in Malayalam for secondary school pupils of Kerala (P. Kelu 1985)	1
A test of reading comprehension for secondary school pupils (P.Kelu1985)	1

Scales employed the Doctoral Researches in Education 1988-2009

There are 43 scales employed the Doctoral Researches sampled for the study. The figure 6 shows rating scale, scale of achievement motivation, socio economic scale, self -concept scale, and Psychological measures like attitude and anxiety scale and other scales sample for the study.

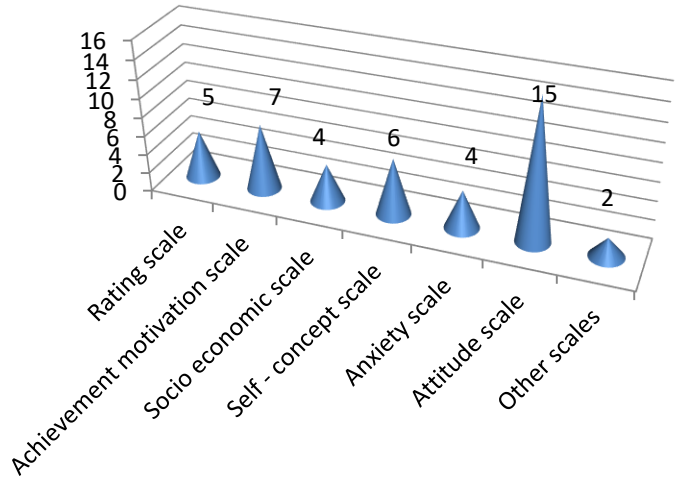

Figure 6. Scales employed the doctoral researches in Education 1988-2009

There are 26 Inventories employed in the doctoral researches sampled for this study.

Statistical Techniques Employed the Doctoral Researches in Education 1988-2009

The qualitative techniques conducted in the researches are frequency, content analysis, classificatory techniques and qualitative criticism. Quantitative techniques include comparison of means, correlation, regression, ANOVA, ANCOVA, factor analysis and path analysis.

Doctoral researches using different quantitative analysis techniques

Comparison of means and proportions(72)		***ANOVA and ANCOVA (48)***	
Independent	48	One way	6
Dependent	12	Two and more	26
Scheffe	16	ANCOVA	16
Proportions	6	***Factor and path analyses (10)***	
Correlation and regression (48)		Factor analysis	8
Biserial	4	Path analysis	2
Chi square	4		
Spearman's rank correlation	2		
Comparison of correlation	24		

Multiple Regression 14

Among the researches studied, 48% use test of significance of difference between mean scores of large independent samples, 12% use independent samples t test, 16% used scheffe test, 6% used proportions. In Correlational techniques, 4% uses Biserial, 4% use chi square, 2% use Spearman's rank correlation, 24% use comparison of correlation.

The experimental studies have made use of pre experimental and experimental design. Among the most experimental designs have been simple pre-test, post-test designs with one treatment and one control group.

Summary of strength and weaknesses in doctoral research areas is given in Table 1.

Aspect of educational research	**Strong**	**Moderate**	**Weak**
Levels of education	Secondary education	Upper primary	Elementary and Pre-school
Teacher education	Teacher	Curriculum	Teacher education programme
Outcomes of education	Achievement and cognitive variable	Affective outcomes	
Influential factors	Learner –related	Home related	School related
Tools	Tests	Scales and inventories	Questionnaires and inventories
School subjects covered	Mathematics and Sciences	Languages	Social studies and art
Data Analysis Techniques	Comparison of means	Correlation and regression	Qualitative techniques

Conclusion

This study will help budding scholars to better understand what the norms are for producing theses or dissertations. For example, a master's student writing a dissertation can use this information to grasp what subject areas or research methods tend to be of interest to their local research community. Second, this information can help the research and higher education community identify weaknesses or strengths in doctoral researches.

The thrust of educational research in university of Calicut is achievement and related cognitive outcomes followed by teacher and teacher preparation, especially of secondary education. Pre-primary and primary education, which takes the attention at national level, is yet to gain attention in this university. Likewise, the education of affective domain, and its measurement, social out-

comes of education, history of education are also yet to gain researcher's attention in education at local level.

Equal thrust is received on attention to learners and their home factors influencing educational outcomes. The institutional and process variables are yet to attain their due in educational researches in department of education. It may be because of the practical difficulties for arranging for the required data in valid ways. Majority of studies adopt quantitative techniques. Researchers seem to be avoiding the topics which require qualitative designs. The constraints in employing qualitative designs may remedy for better and deeper understanding of education and its issues.

Implications

Many of the variables and samples studied are identical and similar. However penchant to develop and standardize measurement tools which can be economically adapted is to be discouraged. In order to help researchers to avoid duplication in efforts this study has provided a list of variables and tools studied by the sampled studies. This list may be made use of.

Most of the studies reviewed concentrated in secondary education and a good number of them focus on teacher education. Researchers need to focus and consider problems in early education, primary education and higher education as well. Although studies focus on particular stage of education like secondary education, or teacher education, the effort to identify a few most significant factors of a specific phase and profoundly investigate them is not evidenced. Most of the studies take up a new variable, examine it in relation to a few other, with subsequent studies not taking up where the previous studies has leaved it.

Vast majority of studies adopt quantitative techniques. Researchers seem to be avoiding the topics which require qualitative designs. The constraints in employing qualitative designs have to be identified and corrected for better and deeper understanding of education and its issues.

Though education as a discipline focus more on practice, especially in its formal form, researchers during the period under study are generally averse to take up teaching strategies, classroom methods, school issues and such process dimensions of education. This may be for practical reasons. Authorities, experts and the educational system need to remove such practical constraints in researching process aspects of education so that more scientific exploration of educational process is facilitated for its improvement.

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