RESEARCH AT CROSSROADS: A CRITIQUE OF MASTER'S LEVEL RESEARCH IN EDUCATION

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Research at higher levels of education offers a picture of decline. This is particularly with respect to curriculum-making, feedback, control mechanisms, inadequate availability of competent teachers, etc. The problem has been noted by Government agencies as well as independent scholars and researchers. What is lacking is clear methodology under which fruitful interaction between young researchers vis-à-vis the chosen area of study could take place. This paper investigates a number of aspects related to research in higher education and suggests a corrective paradigm.

KEYWORDS : scientific method; complexity of knowledge; instructional dynamics.

INTRODUCTION

India is striving hard to emerge as a knowledge economy and a developed nation by 2020 and education has to play an important role in producing globally competitive manpower to realize these goals. Economic sustainability and quality of life of people depends on education. National Policy of Education (1986) stated that "Education has to play a positive and interventionist role in correcting social and regional imbalances, empowering women and in securing a rightful place for the disadvantaged, linguistic groups and minorities".

India is the second most populous country with 1.13 billion persons and has one of the largest systems of education in place. 98% of the children in the age group of 6-14 years have access to primary education and 86% have access to upper primary education. There are 1,01,777 secondary and 50,277 senior secondary schools with an enrolment of 2.43 crores in classes IX and X and 1.27 crores in classes XI and XII. Higher education system consists of 416 universities – 251 state universities, 24 central universities and five and thirty-three institutions of national importance established under state and central legislation respectively. In addition, there are 20,677 colleges. At the beginning of 2007-08, there were 116.13 lakh students in higher education system, out of which 12.94% were in universities and the remaining in colleges (MHRD, 2008). In addition, there is technical education system producing technical

manpower for the economic development of the country. The literacy rate, as per census 2001, was 65.4%. Thirty five million plus persons in the country are still illiterate.

Govt. of India has taken a lot of initiatives to increase access and quality of education at various levels and has also set up Knowledge Commission in the country. Eleventh plan of the country also focuses on improving access and quality of education. The goal of universalization of education is expected to be achieved by 2010 with the introduction of Sarv Shiksha Abhiyan (Education for All) and the enrolment in higher education, which is about 10% of persons in the age group of 18-24 years, is expected to rise to 15% by the end of eleventh five year plan and to 50% by 2040.

Quality of Education and Research

The quality of education at various levels is under severe criticism on account of proliferation of schools and colleges, increasing student population, poor infrastructure facilities, inadequate availability of competent teachers, use of conventional methods of instruction focusing on development of lower level capabilities and an examination system with low reliability and validity, and promoting rote memorization on the part of students. Skills such as analytical skills, problem-solving skills, and ability to design and create are not being developed by the education system. The educational processes and practices in vogue are not based on findings of research studies or sound theories of teaching learning.

The quality of output from an education system depends on quality of input, resources, curriculum, instructional processes, management, feedback and control mechanism and linkages with other organizations. But quality of instructional processes is one of the important factors determining the quality of output, and the quality of instructional processes depends to a large extent upon the competence, commitment and resourcefulness of teachers. President of India, Mrs. Pratibha Patil on Teachers Day described teachers as the heart of the country's educational system. She further remarked that there can be no viable solution to educational problems without revitalizing the teacher-education and providing respect to the teaching profession. Piece-meal approach of introducing changes in one or in the other sub-component of the education system does not help in large scale or significant changes.

The teacher education system comprises Elementary Teacher Training Institutions, Colleges of Education, Regional Colleges of Education and Departments of Education in Universities. At present, about 500 institutions are offering M Ed programmes, either on regular or distance or part-time mode, in different regions of the country. Students pursuing Master's in Education (M Ed) undertake dissertation work as a part of their studies

and many students pursue research at doctoral level. But both quality of education and research in education is also under criticism. National Council for Teacher Education has stated: "Teacher education system itself is in a mode of rapid expansion and diversification. In order to ensure that teacher education practices do not regress into routine processes, that on the other hand, they remain dynamic, vibrant and innovative, it is imperative that there is a need to build a firm research foundation for institutional practices in teacher education. This is all the more so, since teacher education is not merely to serve a reactive role to changes in school system, but it has to show the direction and set the pace for those very changes. Unlike in sciences, social sciences and humanities, research has not, as yet, struck firm roots in teacher education and whatever research is undertaken in education has not formed a definite and functional relationship with institutional processes and practices in teacher education" - in.org).

Research in education being undertaken at various levels has a remote relationship with what goes on within a classroom situation or in practice. The editor of Fifth Survey of Research in Education in India remarked that the quantum of studies in education have maintained an upward trend but it was observed by the experts who authored the trend series for the survey that methodologies applied in the reported studies leave much to be desired. The experts also expressed concern about the general orientation of research scholars in the systematic process involved in quality research and their judicious application in understanding teaching-learning phenomenon (Sharma, 1997).

National Council for Teacher Education is providing financial support to promote research and innovation in teacher education. On the other hand, University Grants Commission has initiated a number of schemes to improve quality of instruction and research in higher education. These include Special Assistance Programme, Assistance for Strengthening of Infrastructure for Humanities and Social Sciences (ASSIHS) and Science and Technology (ASSIST), establishing a network of Academic Staff Colleges in the country, research awards to teachers, research workshops, seminars and conferences, part-time research assistantship for women, junior research fellowships, etc. In addition, other organizations such as Indian Council for Social Science and Research (ICSSR) and Department of Science and Technology also have different schemes to promote research.

Teaching is the most challenging profession. Each day, the classroom poses new challenges to a teacher as teaching-learning is a complex process and is affected by a number of factors related to students, teachers, content, learning environment, resources, management etc. which interact among themselves to determine the student learning. What works best for science subjects may not work equally for other subjects or vice versa. The blend of subject with pedagogy or andragogy is what is required to

improve the quality of education. Research can provide laudable support in formulation of policies related to education, generate new knowledge, solve problems and facilitate decision-making in educational processes and thereby improve quality of education.

Educational research is the formal systematic application of the scientific method to the study of educational problems. The goal of educational research follows from the goal of science to explain, predict and control educational phenomenon (Gay et al, 1996). Mason and Bramble (1989) stated that research is about "finding, structuring and understanding complexities of knowledge. Knowledge may be used to build theory, to develop policy, to support decision-making or just to find out something". It is a systematic and organized search for knowledge.

What differentiates educational research from scientific research is the involvement of human beings. Berliner (2002) rightly remarked that educational research is one of the hardest to do science and it is done under conditions that physical scientists find intolerable. He further stated that doing science and implementing scientific findings are so difficult in education because humans in schools are embedded in complex and changing network of social interaction. Context is important because of interactions that abound. According to him, "Children and teachers in classrooms are conscious, sentient and purposive human beings, so no scientific explanation of human behaviour can ever be complete". Labaree (2008) said "Education research needs to be grounded in teaching practice, if it is going to be able to represent the context of practice effectively".

Quality of Research at Master's Level in Education

During the last three years, a total of 67 dissertations submitted by students of M.Ed. for one of the universities were evaluated. Content analysis was undertaken with respect to the nature of problems studied, rationale and purpose of the study, adequacy and intellectual scholarship in review of related literature, appropriateness of the design, adequacy of sample and appropriateness of sampling technique, appropriateness of tools used for collection of data, appropriateness of statistical techniques used for analysis of data and interpretation of results and quality of reporting references. In addition, information was gathered through viva-voce examination. The analysis led to the following conclusions related to the quality of research undertaken in the field of education at Master's level.

Nature of Problems

Out of 67 dissertations, about 45% studied students' characteristics such as personality, vocational interests, moral judgment, life satisfaction, reading

interests, occupational aspirations, mental health, close-mindedness, neuroticism, moral values, adjustment, attitude towards teachers and co-curricular activities, aptitude, emotional maturity, self-concept, risk taking ability, creativity etc.

16% of them dealt with teachers' characteristics such as value preferences, occupational stress adjustment problems, personality, emotional intelligence, life satisfaction, teaching aptitude, job satisfaction, attitudes and spiritual intelligence. 19% the studies dealt with the teaching-learning process and 9% with the learning outcomes, whereas the remaining studies dealt with other topics such as school environment, population awareness, awareness regarding global warming, identification of students with dyslexia, axiology of Aurobindo, implications of Guru Nanak's philosophy etc. From the above, it is clear that there is a tendency on the part of the students to take problems related to other fields such as psychology, philosophy, history, environmental education etc. and to study factors that can affect teaching-learning, but failed to study the relationship among the various factors and their effect on student learning. Ball and Forzani (2007) remarked that "Knowing and understanding teachers, learners, content or environment – or even knowing and understanding all of these entities is not a substitute for knowing about and understanding the dynamic relationships among them that constitute the core of the educational process. The focus of educational research has to be on instructional dynamics".

The introductory chapter, which should clearly bring out the rationale for the study and explain the context of study, was found to be inadequate in 60% of the dissertations. In case of dissertations (N=20) of one of the institutions, it was found that 50% of the dissertations explained the importance of education, concept and aims of education irrespective of the nature of the problem. In addition, it was found that introduction was repeated over the years by the students working under the same supervisor and in the same area of research.

The introductory chapters (50%) containing conceptual framework, objectives, hypotheses, delimitations and significance of the study contained major chunk of material from books, journals and reference books without due acknowledgement of the authors or the contributors. Research studies have been undertaken without having a clear-cut consideration of the focus of research. Dissertations failed to clearly specify how the study was contributing to knowledge – testing, elaborating or enriching the theoretical perspective or establish a new theory or addresses practical concerns or provide information about a problem or issue (AERA, 2008). The focus of research has to be on use-inspired research based on high consideration for fundamental understanding and use of findings of research (Strokes, 1997).

Objectives and Hypotheses

Another requirement of any good research is the explicit statement of objectives and formulation of hypotheses based on critical review of theory or conceptual framework and critical analysis of review of relevant literature. Objectives of the studies were correctly stated in 95% of the dissertations and incorrectly stated in 5% of the dissertations. The researchers were not clear about the objectives as to whether they were interested in establishing a relationship or a cause-and-effect relationship. The statement of objectives and hypotheses both contained language errors. For example, "Ascertain minimum level of learning in subject mathematics regarding instructional system", "To investigate how far study habits are affecting the academic achievement" and "To discover whether boys and girls differ in their adjustment problems".

The researchers preferred null hypotheses and it was found that only 3% of the dissertations formulated directional hypotheses. Researchers have formulated directional hypotheses even when the findings of review of related literature were inconclusive. Hypotheses were also wrongly formulated in about 10% of the dissertations. For example, "There is significant difference regarding school environment of government schools regarding achievement" and "There exists significant difference between the adjustment of working and non-working mothers" while the objective of study was to study differences in the adjustment of students of working and non-working mothers.

Review of Related Literature

All the dissertations presented review of related literature in the chronological order. Only 25% of the dissertations discussed conclusions drawn on the basis of review of related literature. 50% of the dissertations explained the importance of review of relevant literature in detail without highlighting questions to which the researchers would like to find an answer through the review of relevant literature. It was also observed that researchers failed to classify studies into various categories such as relationship studies, cause and effect studies, descriptive studies etc.

The review of relevant literature was found to be quite inadequate in case of 50% of the dissertations. Only eight to ten studies, that too of different years and not related to the problem were reported in the dissertations. In the case of distance learning programme, it was found that students only reported studies from the university in their region. Internet facility was not used to access the available related literature. Students from private institutions stated that due to non-availability of internet facility in their respective institutions they could not gather information and also stated that library facilities could not be optimally

utilized because of inadequate availability of time for dissertation work. The review of literature has become a ritual and researchers borrow literature and conceptual framework from other researches. Review of relevant literature requires skills to find, evaluate, analyze, and synthesize that literature (Boote and Beile, 2006). According to Cooper (1984), review of related literature can be integrative, theoretical or methodological. Integrative reviews summarize past research by drawing overall conclusion from many separate studies that are believed to address related or identical hypotheses and highlight issues left unresolved. The theoretical review presents the theories offered to explain a particular phenomenon to compare them with regard to their breadth, internal consistency and the nature of predictors. The intent of methodological review is to examine the research methods and operational definitions that have been applied to a problem area. These reviews are often critical of existing research. According to them, good quality research uses one or a combination of these reviews.

However, the dissertations failed to fulfill these criteria.

Methods and Procedures

The research design can be quantitative, qualitative or mixed. All the dissertations except two used quantitative research design. 61 out of 67 (91%) studies were survey research studies. Only one study used historical research design and the remaining studies (6) used experimental research design. However, the treatment period was restricted only to 15 days in 5 out of 6 studies, which appeared to be quite inadequate.

The sample for the study needs to be representative of the population and adequate in order to generalize the findings of research. The sample for the various studies ranged between 50 and 250. The researchers did not adequately describe population and it was not ensured by 90% of the researchers that sample was an adequate representation of population to generalize findings of the studies. One of the dissertations aimed at identifying students with dyslexia and took only 100 students where the research has demonstrated that there is only one student with dyslexia among a thousand students. Another study had a sample of only 100 students of ninth class, whereas the population consists of 10,000 students. All the studies reported the use of random samples but researchers (63%) were not quite sure of the technique used for selection of the random sample and failed to clarify the procedures followed.

82% of the studies used standardized tests mostly validated in Indian conditions for collection of data on the variables under study. 18% of the researchers designed and developed tools and established reliability and validity of the respective tools. However, the questionnaires or achievement tests designed contained errors (language-related or technical).

From the above analysis, it is clear that there is a dearth of qualitative research or combination of qualitative and quantitative research in education The focus of research in education has to be on qualitative research as it can help in improving quality of curriculum, interactions, communication, instructional resources, question papers, feedback, questioning, engagement, collaboration among students etc. and contribute in improving the quality of education. Johnson and Onwuegbuzie (2004) in their article on mixed methods research stated: "It is now time that all the researchers and research methodologists formally recognize the third research paradigm and begin systematically writing about it and using it". There is also a need to convert tacit knowledge within the system with individuals, groups and communities to explicit knowledge and to improve the quality of education and research in education. Researchers also need to have explicit orientation towards methodology of research in order to select appropriate design, sampling techniques, as well as tools and evaluation techniques for the studies. This will also ensure adequate generalizability of findings of research studies.

Analysis and Interpretation of Results

Analysis and interpretation of results constitute an important part of the research work. Depending on the objectives and hypotheses of the study, the researchers used descriptive statistics and inferential statistics. The statistical analysis used included mean, median, mode, skewness and kurtosis, percentages, chi-squares, ANOVA, Pearson Product-moment correlation and t-test were used wherever required. It was observed in the viva-voce that students could not explain the rationale behind use of statistical techniques.

In 65% of dissertations, results were reported and no interpretation was given. The results were neither supported nor contradicted by the previous studies undertaken in the area and cited in review of related literature in dissertation. Plausible reasons for relationship or differences were not explained. If t-ratio was found to be insignificant, it was simply indicated that the null hypothesis is accepted without interpretation of the results. Likewise where t-ratio was found to be significant, it was stated that there exists significant differences and the hypothesis stands rejected. The researchers did not explain which group performed better than the others and the reasons for better performance.

About 10% of the dissertation results were misinterpreted. For example, when t-ratio was found to be insignificant, instead of rejecting the null hypothesis, the researcher accepted the alternate hypotheses.

The analysis suggests that interpretive, analytical and reasoning skills of researchers need to be improved.

References

References were cited correctly in 80% of the dissertations but were found to be inadequate in the case of 90% of dissertations. References were missing in the text of the dissertations. Internet references were only reported by 5% of the researchers.

The above findings point out some of the major drawbacks in the quality of research undertaken at the Master's level in education. Further in-depth research is required to specifically pinpoint the errors or drawbacks in the quality of research.

Strategies for Improving Quality of Research at Master's Level in Education

The following strategies need to be adopted at the department or institute level to promote excellence in research in education at the Master's level.

Changes need to be introduced in the methodology of teaching the subject of 'Research Methodology' at Master's level. Theoretical input on various themes should follow hands-on experience to the students through practice tasks. Research reports, articles and papers should be integrated into teaching learning to develop analytical and evaluation skills among students. Students should be encouraged to critically evaluate reports, articles and papers and discuss among themselves the strengths and weaknesses of the research already carried out and suggest appropriate design, sample, tools and interpretation of results as well as encourage the researcher to identify gaps in research. Students should also be encouraged to give seminars or presentations on various themes related to research methodology.

Interactive sessions with the policy makers, regulatory authorities, management, principals and faculty of schools and colleges need to be organized to identify issues and problems faced by the stakeholders to identify research problems. This will ensure sharing of experiences, selection of relevant research problems and utilization of the findings of research for policy formulation and decision making as well as introducing changes to improve quality of education.

Technology needs to be integrated in educational system. Each college or department of the university should have its own website and provision for e-bulletin, discussion forum, e-chat, blogs, etc to encourage interaction among the faculty at various levels and students. The research undertaken by both faculty and students should be uploaded to disseminate the findings to teachers, managers, policy makers, etc. This will help in generation of new ideas, cross-fertilization of ideas, sharing of ideas and dissemination of the findings of the research.

A committee consisting of three to four members having expertise in research need to be constituted at the department or college level to scrutinize the research proposals of the students of M.Ed. and ensure relevance, accuracy and appropriateness of objectives, hypotheses, design and statistical analysis. Evaluation at the initial stages will help the students in crystallizing the areas of research and utilizing appropriate methods and procedures for the study.

Students are to be encouraged to participate and present papers at research seminars and conferences and also publish the same in reputed journals. There should be financial provisions for the students to encourage this activity.

Both students and supervisors should take dissertation work more seriously. The work should start within two to three months of the academic session. Students should be encouraged to select, define research problems and prepare research proposals on their own, rather than receiving directions from the supervisors. They should be given freedom to develop decision-making capability.

Before the final submission of dissertations, students should make a presentation to the faculty and students of the department/college. Modifications, if any, should be incorporated on the basis of discussions that follow and suggestions provided.

The abstracts of research must be published and uploaded on the website of the concerned institutes/ departments for dissemination and use of findings of research and to avoid duplication of research.

There is need to set explicit criteria for evaluation of dissertation work covering all the relevant aspects of the nature of the problem, rationale for the study, review of relevant literature, methods and procedures, analysis and interpretation, conclusions drawn, suggestion for further research etc. There is a need to create a culture that recognizes excellent research and acknowledges when work does not meet standards that are agreed upon (McDonnell, 2008),

Faculty supervising the dissertation work also need to be encouraged to hone their teaching and research skills through:

Use of innovative strategies in the classroom;
Publishing research papers;
Participating in research seminars and conferences; Undertaking sponsored and consultancy research work; and
Interaction with faculty from other disciplines to encourage inter-disciplinary research.

The implementation of the above strategies requires policy and top management support along with strong will and determination on the

part of faculty and students undertaking research to ensure quality in educational research.

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