Educational Research: A Comparative Study of Indian and Global Trends[1]

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Abstract

The steady decline in quality of research at a time when research and innovation should be a priority has been an articulated concern in Indian academics. The close interaction with the young researchers and research guides indicates the dominance of the conventional approach to doctoral research in education. Stereotype choice of research themes through stereotype approach of guide assigning research problems leading to pigeonhole research findings dominate the scene. Guides are guiding doctoral research without specialization. Research begins and ends with a PhD. There is a complete mismatch between the number of doctorates and researchers. One of the feasible ways of resurrecting or reconstructing Indian doctoral research in education is to open up to examine the contemporary global trends in doctoral research in education. The purpose of the study was to make a comparative study of doctoral research in top-ranking global and top-ranking Indian universities. Adopting comparative education methodology, this paper examines 100 doctoral dissertations from top 10 global universities (QS ranking) and 100 doctoral theses from top 10 Indian universities (NIRF raking) for the past decade. Four significant issues were investigated during the comparison- topic, procedure, presentation, and dissemination- based on a framework for quality improvement. Findings revealed stark differences between two trends in all four domains. The study reveals that the top 10 global universities focus on the contemporariness scattered across dappled issues while Indian studies continue to engage in a few archetype conventional issues with dreary reiterations. The newness of thought is rare in Indian research, while interdisciplinary mixing of methods and practices had been the hallmark of its global comportment. Practice orientation has been a unique research attribute in the top 10 global universities. They have attempted to reduce the age-old gap between educational research and practice. Methodological innovativeness, structural orientation, readability, and research dissemination were exemplary in those top global universities. In contrast, top Indian universities are still reeling under orthodox descriptive surveys with hesitating reporting. Finally, the researchers recommend a framework for bringing Indian research out of its cocoon to make it globally comparable.

Keywords: educational research; higher education; doctoral studies; a comparative study.

Introduction

Albert Einstein once wrote that if we knew what we were doing, it would not be research; it is a spontaneous outcome of imagination, the real factor behind scientific research (Albert Einstein

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Quotes. n.d.). But are we flying on imaginative wings or sitting on the same plane with a hefty mind? It has been one of the basic questions besieged here. Scientific research has always been of high significance since it not only affects policies and practices but also serves as the empirical basis for implementers (Mukhopadhyay & Parhar, 2001). Every education system on this globe in contemporary times tries to follow a tight correlation between a country's education level and its economic productivity with the hope of preparing its students for advanced studies and jobs. Any major diversion springs academic frustration.

Educational research plays a big role for a country to stay competitive among global economies and its educational outcomes. It has been increasing in quality and quantity across the globe (Chang, Chang, & Tseng, 2010), particularly research regarding instruction affects the educational practice forming the basis for educational reforms (Yavuz & Gulmez, 2016). New trends, thoughts, and practices have been evolving each day. Here comparative studies hold immense importance and raw materials for the thinking minds as well, celebrating the words of Rene Descartes (1644), the French philosopher who said, "*Gogito ergo sum*" *(I think; therefore I am)*. Phillips & Schweisfurth (2007) has stated that "comparison is indispensable to our thought processes" (p.13) and the constant comparing and contrasting are a vital part of what international educators do (Beneitone & Yarosh, 2022).

There is no security on this imperfect earth; there are only opportunities and time; never excuse those who hesitate to consume one when it comes to them. Presently, education in developing countries like India has been reeling under several inadequacies and is at a crucial stage of transition that demands thoughtful consummation of good thoughts and practices from the bests to overcome an enormous cognitive frustration (Mukhopadhyay, 2020). This is possible only through focusing on research and innovation (Beteille, 1997).

From this perspective, the current study has been thought of and designed to compare current trends of educational research taken up in the past decade between top global universities and that in India. The outcomes of this desktop study will offer exclusive benefits to any ambitious developing country searching for ways to craft its notches in educational innovation by generating awareness of its limitations with streamlines to improve its educational research practices.

Emerging trends in educational research

Education as a professional field and academic discipline has historically been influenced by socio-economic changes and is a crucible for newfangled trends and ideas. It is no longer limited to the broad division of teaching philosophy and teacher education, educational psychology and counselling, school and higher education, educational technology, etc. Rather, minute ramifications have reached the ionic level with the inclusion of developing issues like social-emotional learning, adaptive learning, self-regulation, school effectiveness, mind-mapping, etc. Besides academic areas, nonacademic areas like social, emotional, behavioural, and character skills, knowledge, attitudes, and competencies have gained rapid traction for holistic learning (Jones et al., 2015; Jones & Kahn, 2017).

The recent COVID-19 pandemic highlighted several new trends in education that promise to be the focus of future policy and practice in 2022 and beyond: the importance of skills that supplement the learning of content, systemic inequities in education systems, and the role of digital technology in the education of the future (Kundu & Bej, 2021). Similarly, a better understanding of student engagement, motivation, and teacher involvement has focused on providing more inclusive and accessible educational experiences for all students (Brush et al., 2022). Specific areas of sensitive

research are also included that address difficult areas such as sexual deviance or that which is conducted with vulnerable groups of respondents such as children (Jupp, 2006).

Thus, the scope of educational research is huge and multi-pronged, encompassing various disciplines like technology, psychology, economics, sociology, anthropology, philosophy, and whatnot. It is genuinely multidisciplinary. One long allegation against educational research is being remote from practice or lack of practicality which has been accepted by several past studies (Lodico, Spaulding, & Voegtle, 2010; Jones & Kahn, 2017; Kundu, Bej, & Rice, 2020). Grimmett & MacKinnon (1992) observed teachers' main concern lies in translating research findings to improve their practice. Hiebert, Gallimore, & Stigler (2002) pointed out that teachers rarely draw from research-based knowledge to improve their practice. Practitioner research is generally viewed as a 'bottom-up' approach to making teaching practice more professional (Cochran-Smith & Lytle, 2009).

Practicality has been defined as a dominant trend in educational research contributing to its relevance (Van Velzen, 2013). Methods of research have also been emerging, taking cues from a range of disciplines and mixing each other based on basic approaches like academic research or applied research (Kincheloe, 2004). Practitioner research, where research and practice go hand in hand, is gaining traction across the academic arena and may be defined as the latest trend in educational research (Kemmis, Mctaggart, & Nixon, 2014; Abayneh, Lempp, & Hanlon, 2020). Innovation through emerging focus, treatment, and practice orientation or problem-solving is the hallmark of contemporary educational research. But how far these approaches have been practised in the mainstream research, the doctoral studies is the concern in this study.

Importance of doctoral research in universities

Doctoral research under university parasol is a global phenomenon having immense importance in moulding good researchers at various stages in their careers. At the same time, it is considered essential to the development of research and innovation in a certain country (Vijayakumar, 2007). Here universities are involved with researchers in several domains, from rendering cognitive help to financial assistance to psycho-moral goodness, leading to the awarding of highest level degrees like PhD. It is also found that the number of students undertaking and completing higher degree theses has been growing rapidly all over the world in recent years, and a country-wise statistics of some potential countries could be good support of this claim.

According to the National Science Foundation (NSF) survey, during the 10-year interval between 2010 and 2020, the US universities collectively awarded almost 500,000 doctorates compared to 400,000 for the preceding 10-year period. In 2018-19 alone, about 85,769 male and 101,799 female students earned a doctoral degree in the United States. This number will be presumed to be raised significantly by 2030 (Number of doctoral degrees, 2020). In 2014 number of PhD.s awarded in the USA was 67,449, the highest on this earth, followed by Germany (28,147), the UK (25,020), India (24,300), Japan (16,039), France (13,729), South Korea (12,931), Spain (10,889), Italy (10,678), and Australia (8,400) as per data available with the OECD (These countries have the most doctoral graduates, 2017). The same report found certain scientific fields are more popular among PhD scholars, and 40% of new doctorates awarded in the OECD area are in science, technology, engineering and mathematics disciplines (STEM).

The above statics indicates India has been the 4th largest contributor to the global pool of doctoral degrees. Currently, the Indian Higher Education system has 1026 Universities and other institutions of national importance offering Doctoral Programs (List of universities in India, 2022). The number of women awarded PhD.s was 8,775 in 2012 and 14,221 in 2017; the number of men

awarded PhD.s stood at 14,855 in 2012 and 20,179 in 2017 (Panda & Jena, 2020). Doctoral research constitutes the backbone of Indian research, and analysis of it will help an understanding of the country's presence and prospects in research and innovation.

The term PhD is a short form for Doctor of Philosophy (Philosophiae Doctor), frequently referred to as a Doctorate. As a PhD scholar, one is expected to have a keen personal interest in a certain topic and a strong academic background to pursue it in a structured manner under the supervision of one or more expert faculty (Dinham & Scott, 2001). At the end of this systematic, rigorous process, they are expected to write an extended thesis, demonstrating evidence of their capacity to pursue scholarly research. The results should claim an original contribution to knowledge and be of a standard appropriate for publication. Thus, these studies enjoy a lot of honour and respect from incumbent minds in academia in general and a country in particular.

A doctoral thesis or dissertation must be an original contribution to scholarship. Thomas, Nelson, & Magill (1986) pointed out that the traditional 5-6 chapter format of a doctoral thesis often makes it unsuitable as a result, $^1/_3$ or ½ of all dissertations remain unpublished across the globe, subject to substantial revision to make it conform to the genre of the journal article. Another purpose of a thesis is to be the basis of a book that, when published, will become part of the scholar's documentation in his professional career and scholarship.

There is no doubt that Doctoral theses are a worthy contribution to the world of knowledge and invariably have a significant impact on the economic and social proliferation, strengthening the fabric of lifestyles in the society in general. The benefits may be summarised as reading, writing, critical analysis, authentic derivations, and social empowerment. The current comparative analysis of doctoral theses between ten top global and ten top Indian universities will evidently offer a lot of space for mutual proliferation that will eventually open up many untrodden avenues of contemporary trends of educational research across the globe.

Conceptual Framework

Despite having practical and philosophical complexities, all research must respond to canons of quality, although it is difficult to delineate the quality. In academic communities, it is vital to assess research quality. Moyer & Finney (2005) suggest such assessment is of immense value from the research accountability perspective and capable of recommending guidelines to improve the conduct and value of research. In educational research, maintaining quality can increase practice, knowledge pool, and understanding of learning and teaching, leading to improved teaching techniques or strategies. But no set guideline provides a universally accepted convention in judging research quality resulting in the loss of importance of quality measures in scholarly circles (Dornyei, 2007).

Jaroongkhongdach (2011) has discussed three dimensions of good research after a detailed review of past literature, including research quality, research procedure, and research presentation. By researching quality, he meant the focus or subject matter of research related to research procedure quality and research presentation quality. Research procedure quality relates to ensuring the reliability and validity of research based on research approaches. Several research approaches common in diverse fields are quantitative, qualitative, and mixed methods (Creswell, 2003). Embracing the positivist point of view, quantitative research mainly aims to explain cause-effect phenomena (Fraenkel & Wallen, 2007). In contrast, qualitative research primarily holds constructivist perspectives (i.e. the multiple meanings of individual experiences) that say knowledge is value-laden and context-bound as a particular social environment in which people live (Pathak, Jena, & Kalra, 2013). Although not have its quality criteria (Sale & Brazil, 2004), the mixed-methods approach

combines the approach of the earlier two to enhance 'reliability' and 'validity', which is claimed as triangulation (Todd, 2003).

The third dimension is research presentation quality, which deals with two related issues: text-oriented and interpersonal-oriented. The text-oriented issues involve clarity and coherence, two essential concepts in research report writing (Mackey & Gass, 2005). They have recommended a logical framework for a research report that follows an introduction, literature review, research gap, conceptual framework, methodology, results, discussion, and conclusion to measure this dimension. Another issue under this dimension is the interpersonal-oriented, which is the quality of how the researcher intrudes into the minds of the audience through communication (Hyland & Diani, 2009). For this second aspect, current researchers stressed the readability metrics of the texts determined on the *Flesch Reading Ease Formula*, the most common and the most publicized readability formula developed by Rudolf Flesch (1948). Readability is a well-written text; a text with lexical and structural difficulty will challenge readers without overwhelming them (Waller, 2011). The popularity of this formula made Rudolf Flesch a leading authority on readability (Zamanian, 2012).

Few other studies have specified 'relevance' as a vital dimension for quality research which determines the level up to which research findings apply in real life and its potential to fill a gap in knowledge that people currently don't know or understand very little (Zackoff, Real, Klein, Abramson, & Gusic 2019). Shaw & Elger (2013) have identified two key types of relevance: scientific relevance, where a study increases our understanding of a particular field or a process, and societal relevance, where society directly benefits from this increased understanding.

Relevance can also be assessed through the range of knowledge dissemination for which citation analysis has been a well-established technique. It measures the relative importance or impact of an author, an article or a publication by counting the number of times that other works have cited the author, article, or publication. Citation impact, a way of dissemination analysis, measures how many times an academic journal article or book or the author is cited by other articles, books or authors (Garfield, 1955). Citation counts are interpreted as measures of the impact or influence of academic work and have given rise to the field of bibliometric or scientometrics (Harnad, 2009).

Several tools are available for citation analysis, some are subscription-based, and others are free (Moed, 2005). He said each tool has its strengths and weaknesses, and none of them covers the entire universe of scholarly publications. Therefore, Leydesdorff & Milojevic (2012) thought it is important to use more than one tool to get a fuller picture of the scholarly impact of an author or a journal. In this study, the researchers have resorted to three major citation analysis tools used Web of Science (WOS), Scopus, and Google scholar, all of which include Social Sciences, Arts & Humanities as a subject focus.

Recently, Moeini, Rahrovani, & Chan (2019) has prepared a framework to determine the relevance of research having four key dimensions: potential practical relevance in topic selection, knowledge product creation, knowledge product translation, and knowledge product dissemination. Akkerman, Bakker, & Penuel (2021) observed we characterize the ontology of education and learning in terms of people's meaningful movements in an always-changing world and propose that the relevance of educational research resides in what we call "ontological synchronization"- continuous attunement to what is happening and matters at hand, and what future is being generated, including what values and judgments researchers themselves perpetuate in society (p. 416).

Gill & Bhattacherjee (2009) pointed out potential practical relevance in the topic selection, which refers to attempts to choose a valuable research topic for practitioners. Senn (1998) recognizes

that research "is not practical if findings cannot be applied in practice, even if the question under investigation is relevant (p. 28)". Moeini, Rahrovani, & Chan (2019) found relevance in usability and the potential to avoid the risk of being 'lost in translation'. Gill & Bhattacherjee (2009) found relevance for a different perspective on disseminating the created knowledge products to the right audiences. All these hints at the key factor included are implications for practice and usability for knowledge end-users and disseminators.

Based on the outcome advocacies and observations in the above literature survey, the researchers have developed a comprehensive *Research Quality Relevance Matrix* presented in Figure 1. It has four dimensions-topic relevance, research procedure, penetration, and dissemination. Research excelled in these dimensions can be termed quality research. Topic relevance determines how a piece of research conforms to the current needs and issues. In educational studies, these include quality, inclusion, early childhood education, skill orientation, creativity, vocational training for the vulnerable, non-violence, sustainability, quality teaching, internationalization, digitization, etc. (Huckle & Wals, 2015). It includes the knowledge relevance that determines how research contributes to and enriches a particular field of knowledge and interconnectedness, conforming to the views of Zackoff, Real, Klein, Abramson, & Gusic (2019).

The research procedure assesses the methodological compliance with the topic and methodological innovations. Research presentation denotes the structural approach of the study, including the readability of the language. Dissemination is the range that the research has reached to the readers assessed through the citation analysis in this study. This matrix is used as a conceptual framework in this study. The authors hope it is domain neutral and can be equally helpful in determining research quality outside educational studies.
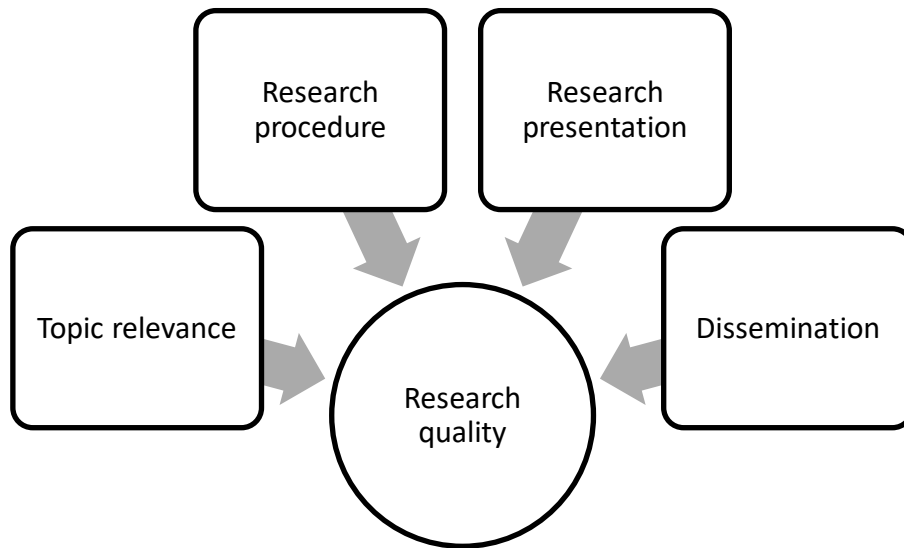

Fig. 1: Research Quality Relevance Matrix
Source: Authors

Research objectives

Higher education and research are fundamental constituents that require careful analysis and timely evaluation to monitor their outcomes in a certain country. Ding (2015) believed higher

education is an effective tool for human capital theory to develop the science and technology that might require for a standard of living in a global knowledge economy. Daraio et al. (2019) highlighted a few important factors that drive precision in scientific research like internationalization of the higher education sector, university rankings, the building of world-class universities, collaborative research centres, research funding, etc. A lot of studies hold university ranking as an indicator of quality research and scientific reforms (Liu et al., 2015; Chinta et al., 2016; Menon, 2016), whereas few others equate low ranking with low exposure to the quality research (Mironos et al., 2015; Gonzalez-Brambila et al., 2016).

A survey made by Jiao et al. (2015) revealed that a major thrust had been focused on the journal publications in the global arena, and a glimpse of subordination towards doctoral studies is obvious. In the Indian context, maximum studies concentrated over journals and doctoral studies were overlooked or put into a lot of lesser importance (Padalkar & Gopinath, 2015). Reasons are many, from their unavailability to cumbersomeness that doesn't fall under the preview of this study. But there is no denying that doctoral studies have immense importance in making a country advanced in its scientific potential and progressive (Vijayakumar, 2007).

Considering the immense importance of doctoral research, in this study, researchers have put a new thrust over these institutionalized studies in a time of journal-oriented research to assess educational research. The comparative research design has been followed to compare Indian and global trends to identify the best practices for mutual advancement and enhanced efficacy. It will contribute to the literature on the importance of doctoral studies of higher educational institutions in redefining current educational trends and how they are responding to global change. This will help generate a renewed interest in these studies; simultaneously, this being a comparative analysis, the acknowledged goods of a comparative study naturally adds to knowing others and learners from their bests on the ground of a self-assessment. The specific research questions set for this study were as follows:

1. How do these trends differ with respect to research focus?
2. How do these trends differ in respect of research procedure?
3. How do these trends differ in respect of research presentation?
4. How do these trends differ in respect of research impact?

Research design: approach and data

This study aimed at a comparative analysis of the doctoral research in education conducted in top global universities and in top Indian universities in the last decade to compare the two trends. The main purpose was to conscientize Indian universities and research guides to raise the level of Indian research to match contemporary trends and global competitiveness. It followed a qualitative descriptive literature review based on the online desk research method. For data, it was reliant on the secondary materials already published online and accessible in institutional repositories, central repositories, public libraries, or websites (Lefever, Dal, & Matthíasdóttir, 2007).

The top 10 universities across the globe were selected based on QS World University Rankings, which is an annual publication of university rankings by Quacquarelli Symonds (QS). The QS system offers an authentic and globally acceptable university ranking schedule spread across three domains, global standing, and subject-wise divisions (48 different subjects and five faculty areas) along with five regional tables, namely Asia, Latin America, Emerging Europe, and Central Asia, the Arab

Region, and BRICS which makes it prominent among strong peers like Times Higher Education (THE) Ranking (Jaschik, 2021).

QS ranks universities based on their reputation among other universities (40%), employers (10%), student-teacher ratio (20%), citations-academic staff ratio (20%), and international outlook, including students and staff (10%) for its compilation of top universities in the world (Baty, 2010). The present analysis was based on the 2022 QS World University Rankings, published on June 8, 2021, and was the eighteenth edition of the overall ranking. It confirmed the *Massachusetts Institute of Technology* as the world's highest-ranked university for a seventh successive year (QS World University Rankings 2022). The final selection of the universities was based on the availability of the education faculty and the online availability of the research that caused few deviations from the normal university ranking. The researchers respected the limitations of universities having education faculty and institutional repositories with free online access to materials.

The basis for top Indian universities' selection was the National Institutional Ranking Framework (NIRF) ranking 2021, recognized and approved by the Ministry of Education, Government of India, in operation since 2015. It is an authentic and reliable ranking framework based on several parameters for ranking purposes like resources, research, and stakeholder perception (A Methodology for Ranking of Universities and Colleges in India). Here, the final selection was based on the availability of the faculty and data available online in Information and Library Network (INFLIBNET), the central knowledge portal for all Indian higher education institutions.

The selected university websites and their institutional repositories were rummaged for data collection. Following the research design, ten doctoral theses written in English from each university completed between 2010 to 2020 were selected. A purposive sampling method has been followed, which is known for its flexibility, convergence with the research aims, and diversity in the samples (Kundu, 2020). The researchers manipulated the sampling plan by keeping an eye on the overall research design to maintain heterogeneity of the data encompassing universities of diverse regions having good QS ranks to get a world view of contemporary educational research. For Indian studies also, universities were from varied regions to reflect the heterogeneity of the data, which also marked a slight deviation in university ranking. A detailed description of the sampled universities has been reported in Table 1.

Table 1: List of universities and number of theses finally selected

QS Rank*	Global Universities	Thesis selected	NIRF Rank*	Indian Universities	Thesis selected
2	Oxford University	10	3	Banaras Hindu University	10
3	University of Cambridge	10	4	University of Calcutta	10
3	Stanford University	10	6	Jamia Millia Islamia	10
5	Harvard University	10	8	Jadavpur University	10
6	National University of Singapore	10	9	University of Hyderabad	10
11	University of Pennsylvania	10	10	Aligarh Muslim University	10

13	Yale University	10	11	Savitribai Phule Pune University	10
14	University of Edinburgh	10	14	Bharathiar University	10
16	The University of Hong Kong	10	19	Mysore University	10
22	University of British Colombia	10	23	Panjab University	10

Ranking varied conforming universities having education faculty, access to theses, and maintaining heterogeneity.

For collecting data document analysis method was used, which is widely popular in qualitative research, where the researcher interprets documents to give voice and meaning to an assessment topic (Bowen, 2009). It is an efficient and effective way of gathering data because documents are manageable and practical resources. At the same time, they are "non-reactive" data sources, meaning that they can be read and reviewed multiple times and remain unchanged by the researcher's influence or research process (Frey, 2018, p. 71). The researchers developed a particular rubric form consisting of the categories of the serial number, author(s), title, method, and focus available with the corresponding author on request. All 200 theses from 20 universities were arranged before taking up for the analysis.

For data analysis, content analysis was used. The data collected through the document analysis were coded by the researchers using the rubric developed beforehand and were analyzed using content analysis. Content analysis is used to refer to any qualitative data reduction and sense-making effort attempting to identify core consistencies and meanings which are often called patterns or themes (Patton, 2002) or categories (Merriam, 2013). As suggested by Smith, "qualitative analysis deals with the forms and antecedent-consequent patterns of form, while quantitative analysis deals with duration and frequency of form"(Smith, 1975, p.218). During content analysis, four basic units were classified-topic, procedure, presentation, and dissemination. All abstracts were separately analyzed and tested for their readability.

An additional analysis of rhetorical moves in the abstracts was performed following the framework for abstract analysis used by Pho (2008), presented in Table 2. The abstract is an independent and stand-alone section of research that accurately reflects the main text and acts as a "*real trailer*" of the full article (Tullu, 2019). Abstracts are concise summaries of more extensive texts that include brief vital information about a research study and are consistent with the main text of the paper (Tullu & Karande, 2018). Studies with all five moves were selected for analysis that excluded a few doctoral theses and replaced by a few new ones from the final pool of 200 doctoral theses.

Table 2: A framework for abstract analysis

Moves	Function	Query
Move 1: Situating the research	Setting the scene	What has been known about the topic?
Move 2: Presenting the research	Stating the purpose	What is the study about?
Move 3: Describing the methodology	Describing the materials, variables, procedures, etc.	How was the research done?

Move 4: Summarizing the findings	Reporting the main findings	What did the researcher find?
Move 5: Discussing the research	Interpreting the results/asserting implication	What do the results mean?

Findings on RQ1

Findings on the focus of the two trends have been reported in Table 3, which shows global studies are more scattered, covering diverse themes, while the Indian studies are more concentrated around one or two topics. For example, 34.9% of Indian studies were found in descriptive educational psychology, followed by teacher education (13.2%), which jointly held 50% of Indian doctoral research. Notable, a considerable 25% of studies were found in the same or closely similar. These statistics can be easily understood from the bar diagram in Figure. 1.
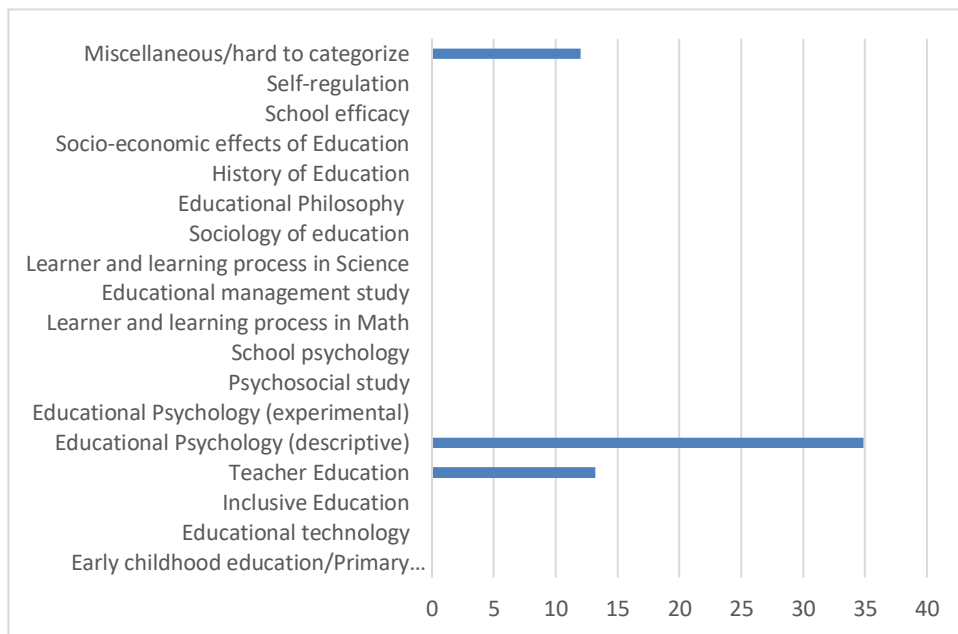
Fig.1: Percentage distribution of focus among Indian theses

This hard stereotyped division is absent in global university studies, where maximum concentration was found in the sociology of education (10.02%). The focus is more scattered across different themes, as presented in Figure. 2. The same or similar studies were almost ignorable at .02%.
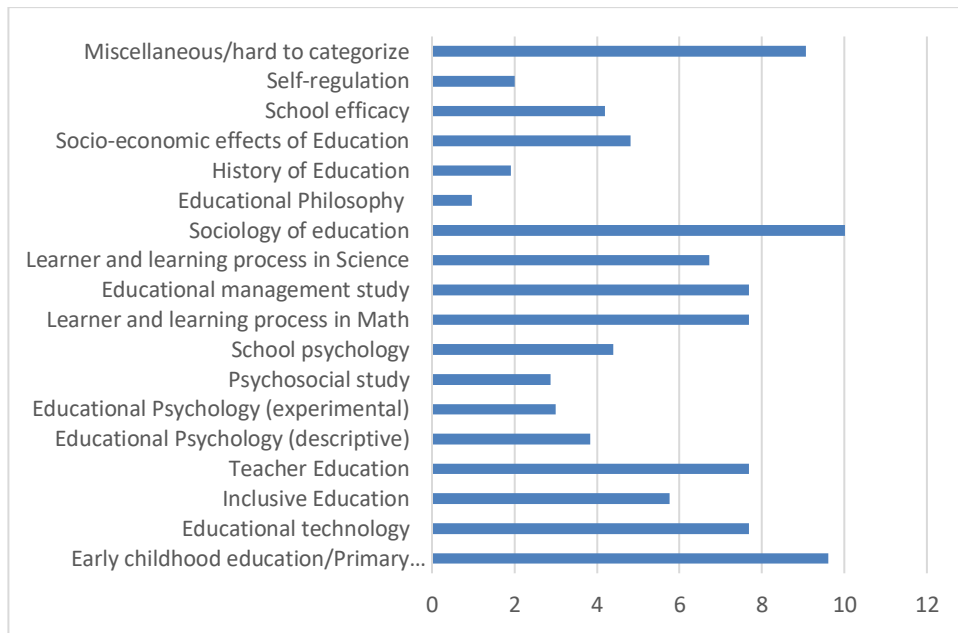
Fig. 2: Percentage distribution of focus among global theses

Research in the latest innovative areas was very limited in Indian universities. For example in educational technology only .03%, inclusive education at .03%, school management .01%, learning science at .04%, and psychosocial studies was .06%. In global universities, these areas were studied more in numbers, for example, in early childhood education (10%), educational technology (7.69%), inclusive education (5.76%), and school management (8%). It indicates practicality, and the quest for innovativeness was more prominent in global universities than in India.

Table 3: Comparison of focus between the two trends

Sl. No.	Research Focus	Global %	Indian %
1	Early childhood education/Primary education	9.61	0.01
2	Educational technology	7.69	0.03
3	Inclusive Education	5.76	0.03
4	Teacher Education	7.69	13.2
5	Educational Psychology (descriptive)	3.84	34.9
6	Educational Psychology (experimental)	3	0
7	Psychosocial study	2.88	0.06
8	School psychology	4.40	0
9	Learner and learning process in Math	7.69	0.03
10	Educational management study	7.69	0.01
11	Learner and learning process in science	6.73	0.04

12	Sociology of education	10.02	0.04
13	Educational Philosophy	0.96	0.08
14	History of Education	1.92	0.01
15	Socio-economic effects of Education	4.81	0.01
16	School efficacy	4.20	0
17	Self-regulation	2	0
18	Miscellaneous/hard to categorize	9.06	12

Findings on RQ2

Findings on the second research question reveal that the two trends distinctly differ regarding their selection of research methods. The doctoral studies in top global universities adopted wide-ranging methods, and hard concentration on any specific method is absent here, as evident in Figure. 3. Out of 100 foreign sample theses, 21% followed the action research and design-based research (DBR) method, a type of methodology specially used in learning sciences, a sub-field of education to develop solutions to problems through interventions. This is a comparatively new method targeting a problem-solving approach. The next major method evolved qualitative study (17%), a subjective approach concerned with establishing answers to the whys and hows of the phenomenon in question (unlike quantitative), and findings are gathered in a written format as opposed to numerical.

The organizational ethnography method appeared in 15% of studies. It is a comparatively new and distinctive approach that seeks to explore the complexities of everyday organizational life through immersion. The structures were concerned with social relations related to certain goal-directed activities over and above the organizational rules, strategies, and meanings within a structured work situation. The ethnographic method has evolved as the 4th major research method in global universities (12%). It is also a qualitative method for collecting data through observations and interviews, then used to conclude how societies and individuals function. Comparative research had a significant share of 12%, followed by the literature survey method, including content analysis, at 4%. Significantly, portraiture, which is a new method of social science inquiry capturing the complexity, dynamics, and subtlety of human experience and organizational life, has been found to share 8%.
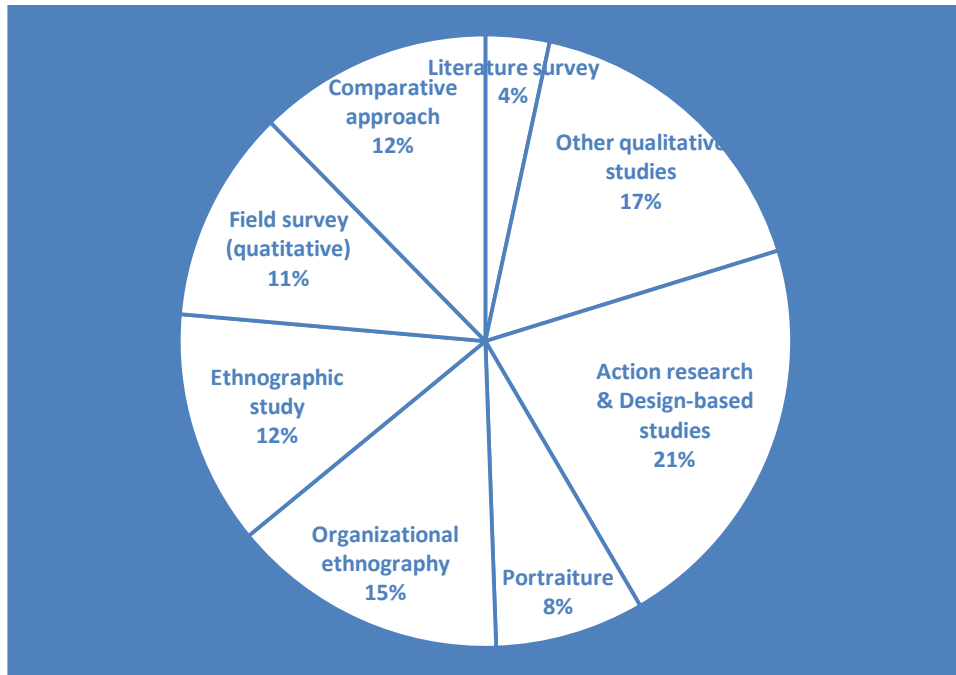
Fig. 3: Percentage distribution of methods in global studies

The picture is different in Indian doctoral studies, as appears in Figure. 4. The concentration on a few particular research methods is evident. The descriptive field survey appears to be the most used method with a share of 40%, followed by quantitative correlational surveys (25%) and quasi-experimental field surveys (17%). Thus survey method was the most dominant among Indian doctoral studies (82%). Another method that made a distinction was the literature survey having a share of 12%. Few studies have been found to adopt methods like case studies (3%), qualitative studies (2%), and comparative studies (1%). But the latest methods like DBR, Organizational ethnography, or portraiture were purely absent.
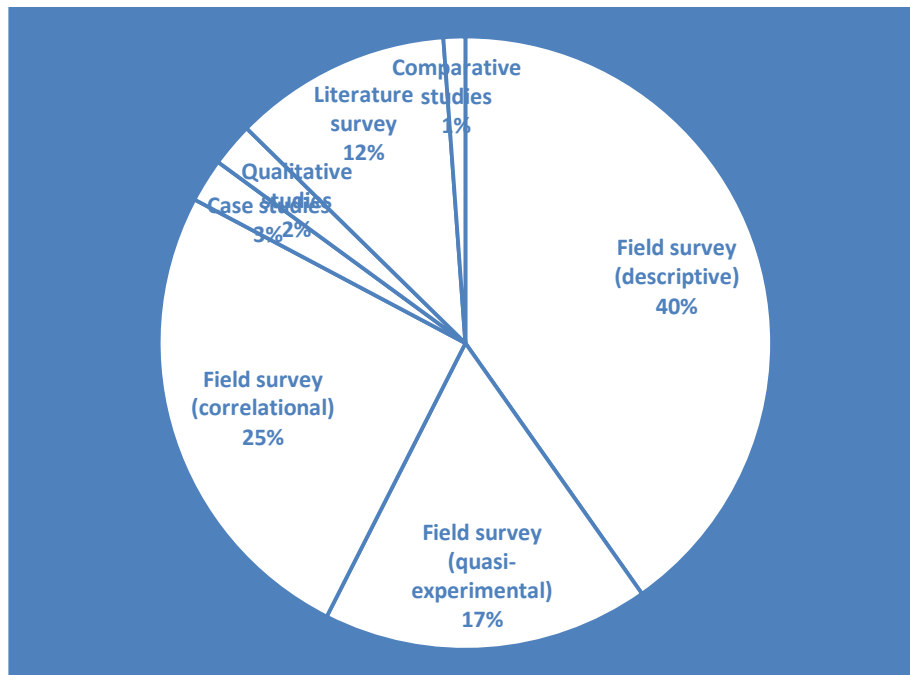
Fig. 4: Percentage distribution of methods in Indian studies

Findings on RQ3

Findings on the third research question: How do the two trends differ regarding research presentation? All 200 sample theses went through deep reading to assess their presentation quality based on text-oriented and interpersonal-oriented domains. The text orientation focuses on the logical structure of a doctoral thesis, which is an introduction, literature review, research gap, conceptual framework, methodology, results, discussion, and conclusion. The findings are reported in Figure 5, which shows that both trends followed the same structural orientation.

Sections like introduction, literature review, methodology, results, discussion, recommendations, and conclusion were common in both trends. But two specific points where differences were remarkable were the research gap and conceptual framework, both of which belong to the literature survey. Still, authors put special attention to these parts, accepting their immense importance in a research study. These are the basic outcomes of a literature survey where palpable difference is evident. Among total global studies, 90% and total Indian studies, 50% had a distinct mention of research gap, and regarding conceptual framework, this ratio was 70:30. Maximum Indian studies didn't mention the research gaps and conceptual frameworks. Another section where the difference was audible is the recommendation, and here also, global studies (85%) showed more concern in comparison to Indian studies (72%).
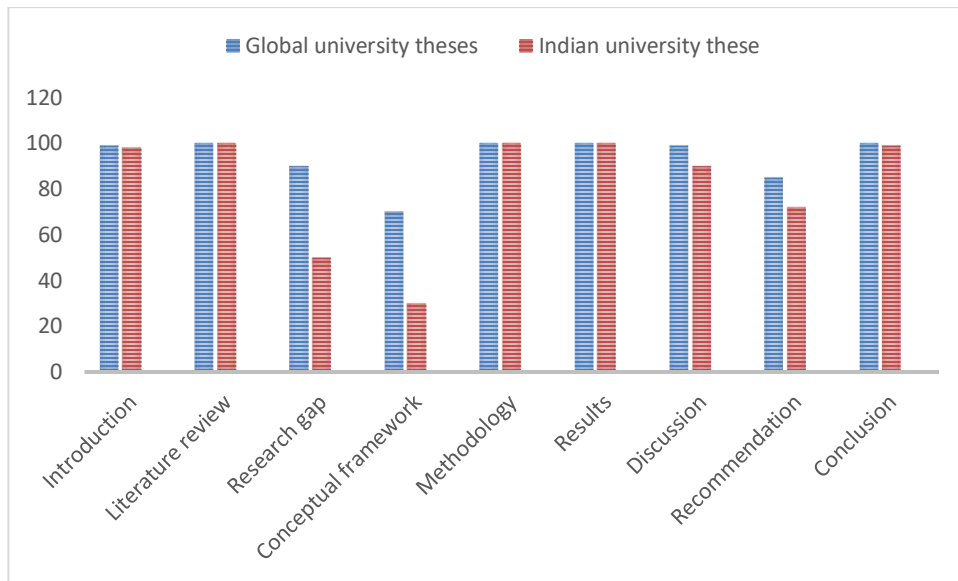
Fig. 5: Comparative presentation of the structure between the two trends

Another issue under this dimension is the interpersonal orientation that has been assessed using *Flesch Reading Ease Formula for readability*. Flesch Reading Ease Formula rates texts on a 100- point scale; the higher the score, the easier it is to understand the document. Most standard passages have approximately a readability score of 60 to 70. The Flesch Reading Ease Formula is multiplying the average number of syllables per word in the text by 84.6, then subtracting the result from 206.835. The equation subtracts 1.015 times the average number of words per sentence from this result. The actual reading ease index is:

$$RE = 206.835 - (1.015 \times ASL) - (84.6 \times ASW)$$

[Where: RE stands for Reading Ease, ASL is Average Sentence Length (the number of words divided by the number of sentences), and ASW is Average Number of Syllables per Word (the number of syllables divided by the number of words)].

All 200 doctoral theses were assessed to determine their readability as per Flesch's set directions with a series of steps, and the findings are presented in Table 4. At the same time, a comparative analysis of the readability scores has been presented in Figure 6. It is evident from Table 4 that 26 theses from the global universities received the highest readability level (having scored 90-100), while only one thesis could achieve that highest level. The qualitative difference here was very acute.

Table 4: Readability level of all theses of the two trends

Readability level		Reading ease scores	Number (Global)	Number (Indian)
Very Easy		90 – 100	26	1
Easy		80-90	36	11
Fairly Easy		70-80	26	19
Standard		60-70	5	26
Fairly Difficult		50-60	3	17
Difficult		30-50	2	15
Very Difficult		0-30	2	11

Next, higher-level 'easy' has been achieved by 36 global university theses, while in the Indian counterpart, the number is 11. '26 global theses have achieved fairly easy' level, and the number is 19 for Indian universities. The maximum number of Indian theses have achieved the 'standard' level, while only five global these belong to this level. 'Fairly difficult' level has 17 Indian theses while the number is 3 for global university theses. While global universities had two theses that fall under the 'difficult' level, for Indian theses, the number is 15. At the 'very difficult' level, there is 11 Indian university these, while the number is only 2 in case of global university theses. Here also, the difference is acute.
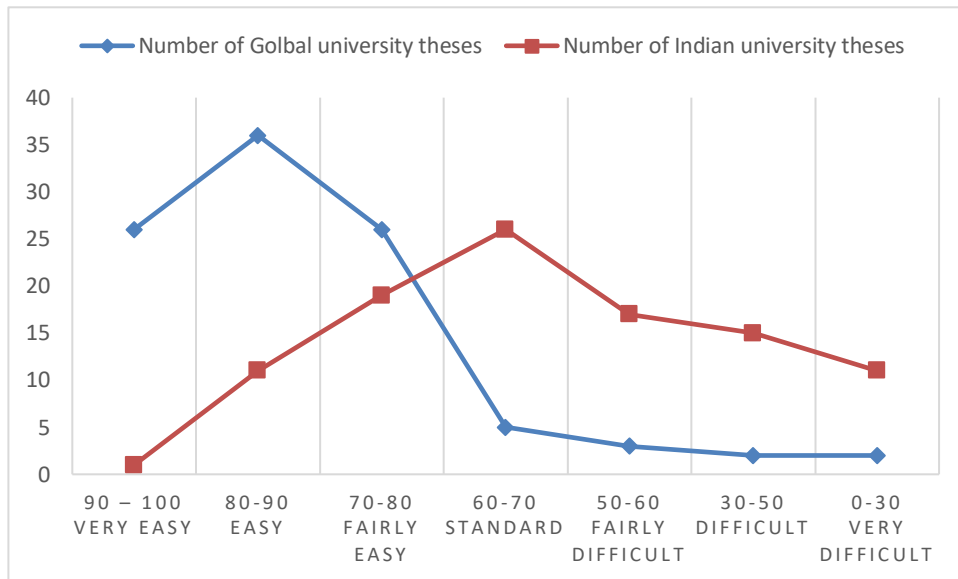

Fig. 6: Comparative presentation of readability scores between the two trends

The comparative analysis in Fig. 6 reveals that the highest number of global university theses falls under the 'easy' level (having readability scores of 80-90), while the highest number of Indian university theses comes under the 'standard' level (having readability scores 60-70). Thus, the average global university theses readability is much higher than that of the Indian universities.

Findings on RQ4

The fourth research question how is the difference in the range of dissemination of the two trends has been determined by a comparative analysis of the current citations of the selected theses in three very popular bibliographic database tools- Web of Science (WOS), Scopus, and Google scholar. The findings are reported in Figure 7. Global theses are far ahead of their Indian counterpart in all three databases. Global theses got 11214 citations in the WOS database, while Indian theses got 157. In Scopus, Global university citations reach 15647, while Indian theses reach only 202. Google scholar shows 16547 citations for the global university theses and 654 citations for Indian university theses. All this information indicates that global universities are far ahead of their Indian counterparts with respect to a range of research dissemination and only uphold their quality research.
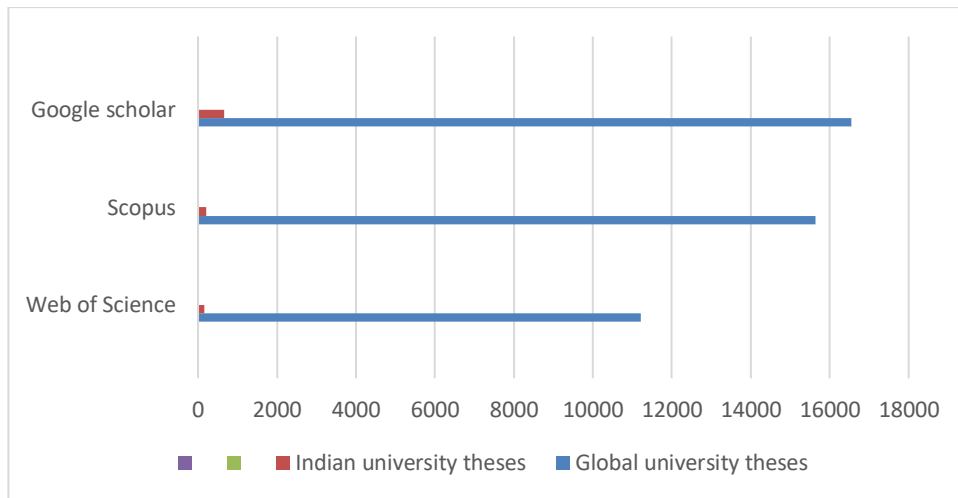
Fig. 7: Comparative presentation of citation scores of the two trends

Discussion

The purpose of this comparative research was to systematically understand educational research in contemporary times and make a constructive comparison between trends in educational research in the past decade between top universities at the global level and the top universities in India. This ambitious discussion was essential, especially for the Indian research, to bring it to the global level and boost the country's economic progress. The four parameters on which this comparison of research quality was made were topic, procedure, presentation, and dissemination. This section presents a discussion on the main findings corresponding to the four research questions.

Quality research should focus on areas of popular interest and needs rather than traditional ones (Van Velzen, 2013). Concerning their focus, two trends showed adequate deference at the centre of the notion of contemporariness. The global universities were taking up more and more contemporary topics for their doctoral research. In contrast, Indian universities were less vigil on this parameter, and their coverage of the topic was much more traditional and reiterative. Besides, global studies are more scattered, covering diverse themes, while Indian studies are more concentrated around one or two topics, descriptive educational psychology (34.9%) and teacher education (13.2%), without centring their innovativeness. This hard division is absent in global studies where maximum concentration had been found in the sociology of education (10.02%), and the focus is more scattered across different themes. These findings only point out the observation Beteille (1997) made nearly two decades ago, and the same unimaginative orthodox research mindset is ruling in Indian universities.

Considering the contemporary global trends in educational research entails the notions of sensitive research (Jupp, 2006) at the same time advocates for ensuring quality, inclusion, early childhood education, skill orientation, creativity, vocational training for the vulnerable, non-violence, sustainability, quality teaching, internationalization and e-learning (Huckle & Wals, 2015). Here also, a stark gap could be visible between the two trends. Indian theses were very limited to contributing in these areas like educational technology (only .03%), inclusive education (.03%), school management (.01%), and learning or cognitive science (.04%), and psychosocial studies (.06%). No theses during the period were found on the other sensitive areas like skill enhancement, creativity, vocational training for the vulnerable, internationalization of education, or sustainability issues.

In global universities, these areas were studied more in numbers, for example, in early childhood education (10%), educational technology (7.69%), inclusive education (5.76%), and school management (8%). The most sensitive areas, such as immigration and refugee students' education, nanoscience, cognitive science, artificial intelligence, man-machine interface, educational economics or knowledge economy, and job market research, have gotten significant attention. It indicates practicality, and the quest for innovativeness was more prominent in global universities than in India.

The second parameter set was research procedure quality or methodology, and here also, points of differences were evident. The global universities adopted varied methods, and hard concentration on any specific method was palpably absent. Design based studies focusing on developing solutions to a problem (Anderson & Shattuck, 2012) with the researchers-practitioners collaborations drew major attention (21% studies), followed by qualitative study (17%), organizational ethnography method (15% studies), ethnographic studies (12%), comparative studies (12%), portraiture (8%), and content analysis (4%). These methods were comparatively new, multi-dimensional, and sought to explore the complexities of everyday problems. The approach is more concerned with social relations related to certain goal-directed activities over and above the organizational rules, strategies, and meanings within a structured work situation (Kundu, Bej, & Rice, 2020).

Among Indian studies, the picture is different where concentration on a few particular research methods is marked. Descriptive field survey appears as the most used method (40% of total samples), followed by quantitative correlational surveys (25%), quasi-experimental field surveys (17%), literature surveys (12%), case studies (3%), qualitative study (2%), and comparative studies (1%). Roughly the survey method is the most dominant among Indian doctoral studies (82%). Besides, the trend of repetition of the same topic or similar topic is taken up at different universities even in the same universities is also very fecund. These are a waste of research effort and time, as Hassan & Barber (2021) pointed out. Top Indian universities preferred descriptive surveys (quantitative or qualitative) over and above action-oriented problem-solving approaches, which show their strict adherence to traditional methodologies.

Findings on the third research question: How do the two trends differ in respect of presentation? All 200 sample theses were assessed on their presentation quality based on two domains- text-oriented and interpersonal-oriented. The text orientation focused on the logical structure of a doctoral thesis-introduction, literature review, research gap, conceptual framework, methodology, results, discussion, and conclusion.

As far as presentation quality is concerned, the structural orientation dimension also found differences between the two trends. Though both trends followed the same structure as introduction, literature review, methodology, results, discussion, recommendations, and conclusion, a few areas where differences were notable were the research gap and conceptual framework. Among total global studies, 90% and total Indian studies, 50% had a distinct mention of research gap, and regarding conceptual framework, this ratio was 70:30. Maximum Indian studies didn't mention their research gaps, conceptual frameworks, and recommendation, which might be a reason for the lack of lustre of educational research in India.

Readability has been another dimension of presentation quality that found average readability of the global theses fall under the 'easy' level, with scores (80-90) much higher than Indian theses falling under the 'standard' level (60-70). Readability is important because it influences how clearly the reader can understand a text. Still, it is one of the basic factors where Indian universities score low compared to global universities.

Concerning the fourth domain of research quality, the range of dissemination and citation analysis revealed that global theses were much faster and broader than Indian theses. This global exposure was analyzed by searching three major international bibliographic database tools- Web of Science (WOS), Scopus, and Google scholar- and in all three databases, the issue of poor exposure to Indian theses was boldly evident.

One of the main objectives of any comparative study is understanding one's society by placing its familiar structures and routines against those of other systems. This comparison heightens our awareness of other systems, cultures, and patterns of thinking and acting, thereby casting fresh light on our system of operation to add improvement. Esser & Vliegenthart (2017) pointed out that comparison provides access to a wide range of alternative options and problem solutions that can facilitate or reveal a way out of similar dilemmas at home. The current found educational research done in top Indian universities falls far short of that esteemed research quality attained by the top global universities. Now, the question comes about what we learn from this analysis and how we can improve our system. Catering to these questions, a framework (Fig. 8) has been recommended to improve the quality of educational research among Indian universities.

For quality improvement of educational research in India and to bring it to the international level, the authors feel a few areas need to be taken care of that have been marked in this framework. First is multidisciplinarity, which views a point of view from different angles by different academic pursuits. Incorporating a multidisciplinary approach and thought is urgent for Indian doctoral research to bring it from its current hibernated state of orthodox practices. More subtle issues of national and international importance need to be focused on that have been influencing academic aspects. To work in these fields, a methodological shift is necessary. These issues demand a method mix, and no hard and first division of qualitative or quantitative research is maintained here. Solving a problem or reaching a possible solution is more vital than methodological orthodoxy, and this will help Indian doctoral studies be free from blind adherence to the surveys.

Problem-based research or a harmonious mix of research and practice is another aspect where Indian studies exhibited poor performance. One research for one problem should be the approach, and sound cooperation between the researchers and practitioners (institutions-teachers-students) will help educational research come out of the age-old allegation of being divorced from practice. Another dominant allegation was a lack of coordination and connection between researchers and institutions. Authors recommend interconnectedness that could be achieved through considerable connections between the researchers and sponsored institutions.

Indian studies were found smeared with structural lacunas both regarding orientation and readability. Structural orientations could easily be overcome through the intense interference of the research supervisors, but what could be done to enhance readability? Being mostly second-language speakers of English, it's difficult to write smooth English for the international level, as evident in the outcomes of Table 4. Still, concerted efforts are recommended, including paid editing services that may be availed to make the theses interesting to international readers. Another vital issue that came out of this research is the stay-at-home state of Indian doctoral studies. Authors found that Indian universities don't have repositories for their research works and centralized repositories (*INFLIBNET*) that exist for the whole country are not enough for proper dissemination of research when every top global university has repositories that have been enhancing their visibility. This visibility helps in the interconnectedness of the research simultaneously, reducing the chances of duplicate studies that are nothing but a waste of time and resources.

Indian exposure to the international level is very limited, as evident from the citation analysis of the three major databases. May be few important studies have been made here, but due to lack of proper attention, these remain out of professional attention. The whole research domain of the country is deprived of the honour that has been an age-old practice of Indian research. Since the time of Acharya Jagadish Chandra Bose, who invented wireless communication using radio waves almost two years before Italian physicist Guglielmo Marconi, he didn't get his due accolade due to this lack of dissemination of research (Krishnan, 2020). Thus, proper dissemination of doctoral studies has been recommended.
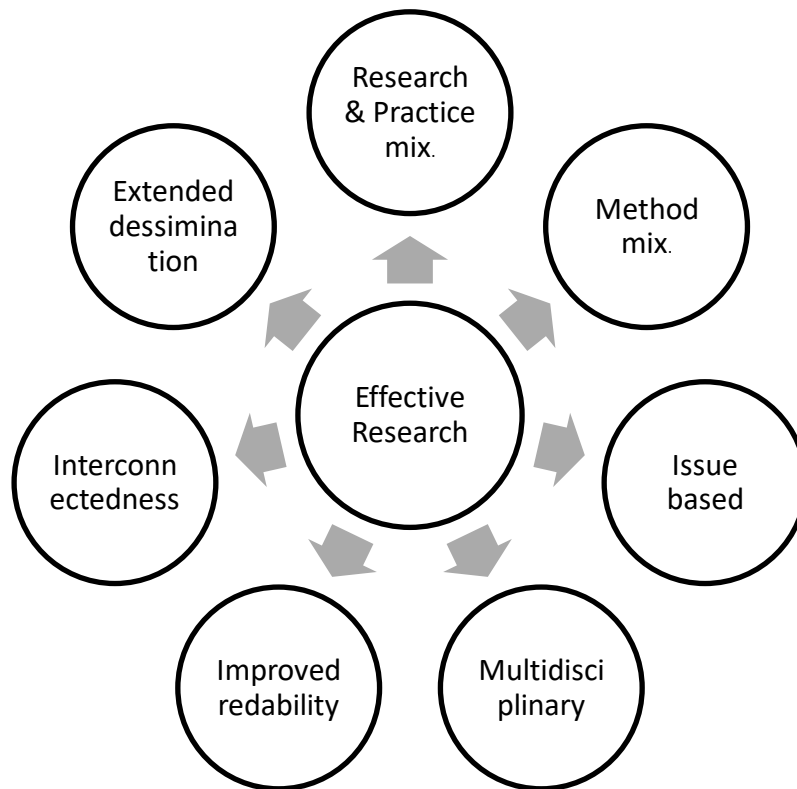
Fig. 8: Recommendations for effective doctoral research in India

Conclusion

This comparative research concludes that doctoral studies have a vital contribution to educational research, and many new trends in educational research have been evolving across the globe over the last decade. Indian doctoral research in education, even in top-ranked universities, didn't catch up with the innovations and elevation of the top global universities. In all four set parameters of the Research Quality Matrix- topic, procedure, presentation, and dissemination - global universities are much ahead of their Indian counterpart. In brief, innovation and imagination are the hallmarks of global universities, whereas Indian universities are still suffering from orthodox repetitive research practices lacking imaginativeness. But the scenario may be improved, as the authors feel, through calculative interventions. They have recommended a framework for action identifying the sensitive places where constructive measures may be taken for the improvement of Indian research. From the selection of problems to the dissemination of research, seven vital places

have been identified, and concerted actions are recommended for the qualitative improvement of Indian educational research. Despite having limitations of conducted with small sample size or subjective bias, this comparative study revealed few stark qualitative differences between the two trends leaving a lot of place for improvement of research and innovation among the Indian universities, which, if genuinely acknowledged, will dramatically improve Indian research reducing the long articulated concern among Indian academics.

Declarations

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