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Abstract

India today attempt to revamp doctoral research by use of anti-plagiarism tools to screen the text of theses in Indian universities and institutions, so far hundred of universities and majority of centrally funded institution have anti-plagiarism practice to detect plagiarism and maintain originality in the doctoral theses. The INFLIBNET centre on behalf of University Grants Commission (a body of higher education, Government of India) playing vital role as all the universities and institutions under it mandate to check plagiarism before its submission by certification and it should be a part of *Shodhganga* theses repository within period of thirty days. India annually producing more than 23000 theses and more than 77000 are ongoing in all disciplines and most of them are other than English language, it being written in Indian regional / vernacular languages which have different scripts not processes by any standard anti-plagiarism tool. Such large part of doctoral research output in India is big challenge for the country to scan similarity check by any standard anti-plagiarism tool since worlds' largest used anti-plagiarism tool *turnitin* is able to scan world's 19 major languages mainstream are western origin.

(Plagiarism, Anti-Plagiarism Tool, Doctoral Theses, Indian Universities & Institutions, India, Shodhganga, INFLIBNET)

Plagiarism Detection of Doctoral Theses: Current Indian Practices and Functionalities

1. Introduction:

Thesis and Dissertation an important document type is a primary source of scholarly literature mostly an unpublished record of original research. It contains a description of new application or a new interpretation of old theme or ideas are written for the doctoral degree. Normally the research is an outcome of three to five years extensive efforts to depict the findings. Recently some international reputed journals published cover stories on Indian scientific and technological research that India has a number of internationally reputed institutions, which are producing a good number of the research documents. The success and achievements of these institutions can give rise to promising research environment in India that may attract sponsored or collaborative research in all major disciplines of study. Some of these institutions provide access to their research documents and learning materials initially to the Indian scholars in other institutions as well as to external scholars in institutions across the globe (Das, et.al, p. 91). India was among top ten countries contributing original research in the world in 1980 come down to twelve in 1990, slipped again below twenty in first decade of new millennium hence research was no longer seen as a prestigious career option because India has failed to provide adequate encouragement, incentive and appreciation for students to get into research areas (Murthy, Narayan). The various reports present dismal picture of doctoral research output of various universities in India and criticises that majority of work practically have nothing to add new to contemporary to ‘knowledge pool ‘ and all those dust-clad shelves of doctoral theses in libraries are nothing but a heap of infertile of academic exercises (Das, 2015, p.3). General view of Indian people is doctoral research in universities and institutions should be at par with global knowledge, real and contemporary findings should be work out at different subject domain but “most of research work suffers from number of ills mere repetition of earlier work, over exploration of a given area, unethical practices such as plagiarism” the reasons are obvious traditional practices, localization and absent of national policies for doctoral research, remained an untapped and under-utilized asset, leading to unnecessary duplication and repetition that, in effect, is the antitheses of research and wastage of human resources the quality is sacrificed. Moreover in India due to evolution advanced technologies and subsequent its uses the practice of electronic publishing took place and plagiarism became most important issue directly associated with quality of research work that most students and faculty have. However, the risks of exposure of plagiarism are much larger in a scenario where theses are available in electronic format publicly given the fact that most scholars and researchers still work in fields where a fairly small group of workers have detailed knowledge of their work. To tackle this issue India has now practices of advanced technology that has made ETD possible also provides a mechanism to detect plagiarized passages in electronic documents through anti-plagiarism tool is examine document files and submit for plagiarism checking. It extracts the text portions of theses. When finds matching file the report is generate which contain the document text with the matching phrases underlined, highlight or red marks. University

Grants Commission, India, 2014 was reported there are 22849 doctoral degrees awarded in this year and every year the tendency of these production increases have to scan by any standard anti plagiarism tool is prime need to check its originality. However, integrated hard statistics regarding doctoral research output in India in a single document so far is not been available but on the basis of extrapolation of available statistics, it is estimated that there is around 50 to 60 thousand doctoral theses are produced in India annually and India is making efforts to have these theses plagiarised free.

2. Plagiarism Meaning

Plagiarism is the discreditable method of others original work may be the word, the idea, text in others writings without being of acknowledgement to the original source. It is unfair means and bad practice identifies in different names in the literature as literary theft, data fabrication, ghost-writing, proxy writings, evidence cooking etc “Plagiarism is the act of stealing someone else's work and attempting to "pass it off" as your own. This can apply to anything, from term papers to photographs to songs, even ideas” obviously is scientific misconduct, made intentional or unintentional most common is direct copying and pasting. The dictionary meaning plagiarism as “wrongful appropriation close imitation and publication of another author’s language, thoughts, ideas or expressions and representation of them as owns original work” nevertheless the act is unlawful, unethical and even criminal.

3. Plagiarism Related Instruments in India

India since long monitoring the cases of plagiarism by legally and ethically, legally it has good copyright legislation enactment since enactment of copyright legislation almost parallel to western countries is good provision to protect the originality of a document, intellectual property rights including authorship. *Indian Copyright Act 1957* amended time to time use the term as copyright infringement for plagiarism cover lot more than plagiarism. Literary work is protectable assets from copying, absolute similarity in text and other misconduct, if found plagiarized the law provided punishment for the copyright infringement. At the same time, the law allowed to the general public to use another’s work for strengthening scholarship and creativity under fair use clause of the act. Fair use is a doctrine is allows limited use of copyrighted material without permission of copyright owner for education, research and other societal benefits. Research and development require funding and much intellectual involvement serious efforts and hard work hence time span for copyright protection under this in India is the lifetime of author/ creators and sixty years after the death. The time span for copyright term in India is almost similar to the western countries for the protection. It is fifty years in UK and USA and seventy years in the European Union. After termination of a term, the work comes under public domain and one may use it without permission and authorisation, not for profit purpose. Another legal instrument has recently issued by Government of India *UGC Regulations 2009* has an indirect effect on plagiarism prohibited illegal copying and duplication. The regulation called University Grants Commission minimum standard and procedure for award of MPhil and PhD Degree regulation 2009 published in the Gazette of India issued under section 26 of University Grants Commission Act 1956 and applicable to all universities, deemed universities, institutions of national importance, UGC recognized colleges running research degree on regular as well as through distance education mode. The regulation is the provision of eligibility criteria for supervisor, admission procedure; adequate training and coursework,

evaluation and assessment method, electronic deposition of theses in shodhganga repository within 30 days from submission. The softcopy deposition into national repository within stipulated period is the most important provision of protection of plagiarism, any individual, supervisor, university administrator and research scholar may consult these deposited copies alert themselves from duplication through theses available in Shodhganga repository.

3. Plagiarism Detected Cases, Indian Scenario: Some Examples

Some plagiarized cases have been detected in India they have been published on the web are cited here as examples. The two teachers from Zoology working at college in Ahmednagar city of Maharashtra affiliated to Pune University have been stripped off status as PhD supervisors and two increments to the monthly salary have been stopped, after inquiry committee by Board of College & University Development (BCUD) Pune University, teachers found guilty of plagiarism illegally copied of earlier published content in 2012 by faculty of Agharkar Research Institute, Pune. (<http://www.dnaindia.com/pune/report-two-phd-guides-found-guilty-of-plagiarism-1966714>). A scientist at Chennai-based National Environmental Engineering Research Institute (NEERI) disapproved her research thesis found as it was a falsification (<http://timesofindia.indiatimes.com/city/Chennai, Jul. 25, 2014>). The two teachers one Delhi University and other from Kirori Mal College have been found guilty in plagiarised as eight five percent of research paper on 'Hibiscus Cannabinus Extract as a Potential Green Inhibitor for Corrosion of Mild Steel in 0.5 M H₂SO₄ Solution' (timesofindia.indiatimes.com/city/Delhi) The another incident of plagiarism was registered in March 2012 in Ahmadabad city- based research scholar made a complaint that the paper was sourced heavily from one supreme court judgement without being of citing the original document against the Director of Indian Institute of Management (IIM) Indore along with one faculty of the same institute. They have submitted paper titled Management Case On "Euthanasia: Should It be Lawful or Otherwise?" after inquiry this article was heavily plagiarized from judgement of Supreme Court of India. The director of IIM Indore and one senior faculty found guilty. One month later the seating chairman and one member retired IAS officer as member on board of governors have also been resigned. (<http://www.pagalguy.com/news/why-chairman-member-iim-indores-boa8796288/>) Indian Institutes of Technology (IITs) are the India's most prestigious institutions have the status of the institute of national importance, in 2010 physics professor in IIT Kharagpur has lost his position as head of the department not shared the research credit to his junior in the same department. Faculty of department of physics in Indian Institute of Technology Delhi is found guilty of plagiarism, Nuclear Instruments and Methods in Physics, Research in physics section B, Beam Interactions with Materials and Atoms in its January 2010 issue, blamed by a faculty Bioscience and Bioengineering school of IIT Kanpur including some other allegedly involved in plagiarism charges from journal Biotechnology advances and subsequently retracted two of his articles. (<http://www.hindustantimes.com/India-news/NewDelhi/Plagiarism-punch-knocks-out-IITs/Article1-611043.aspx>) Some recent incidents of plagiarism in India and (near lack of) action thereof underscores the deep rot that has set in. In the most recent incident, a paper of a senior academic in the All India Institute of Medical Sciences (AIIMS), New Delhi was withdrawn after the editors found several

overlaps including figures (plagiarism) from another review published in 2001 by a UK-based professor. Seven professors of AIIMS including a former Director were accused of publishing the same article in two different journals. Almost 70 papers published in prestigious journals by a professor in the S. V. University, Tirupati were allegedly plagiarized. (Satyanarayana, K, 2010, p. 374).

4. Literature Reviews:

Contemporary studies on plagiarism in the literature have been reviewed and its finding reveal that malpractices over the world have been increasing making uncontrolled manually. Gorman (2008) is termed a plague is spreading elsewhere is not controllable making more serious due to seamless access to scholarly information. Student presently gets access to this electronic information without being fear of copyrights provision that utilising the source direct copying. *M.P. Satija (2015)* written an article titled *Preventing the plague of plagiarism* stated that as per the UK report, more than 17000 such incidents have been reported in eighty British universities including Oxford (Times of India, 2011p.11) “even the Harvard University more” than hundred cases of academic dishonesty has been detected in 2012 (Tribune,2013,p.14). “A cop turned vice chancellor” of an Indian university was not wide of the mark when he recently stated honestly that 90% of theses are a cut and paste work” (Lall, 2009.P.8). Most of the plagiarism cases in India come forward due to not aware the concept of plagiarism, copyrights and intellectual property rights. *Hoorn, et al* described that “there is no awareness on different issues” relating to copyright and intellectual property rights between stakeholders, enforcement agencies, and professionals in the world like the research communities, the study revealed that 30 percent of the respondents did not know” who initially owns the copyright of their own research papers, and 26 per cent respondents indicated a low interest in the copyright issues of their own research articles” clearly indicated that researchers do the research or to make creativity in particular area specialization but low interest in preventing plagiarism even be the owner of published work that same are being copied by another person. T.A. Abhinandan analysed “69 retracted papers of Indian authors, which found that the country's retraction rate 44 per 1, 00,000 papers was higher than the world average of 17 per 1, 00,000 for all retractions”

5. Objectives of Study

The study attempt to analyse anti-plagiarism status of screening of Ph. D theses in Indian universities and institutions, plagiarism policies, provision of coursework and user awareness program, provision of penalties and plagiarism criteria decided. Secondly to review of how many universities and institutions are using anti- plagiarism tool, which anti-plagiarism tools are applying, understand its usefulness, features and functionalities.

6. Methodology, Scope and Limitation of Study

A sample of 68 universities and institutions as depicted in Table 1 mostly public universities have been selected for study against 281 MOU (as on 20th May 2016) with INFLIBNET including some centrally funded institutions. Majority of them have new/ revised ordinances are scrutinized different ways in order to understand the current Indian

status on anti-plagiarism to Indian theses. India has at present 740 universities and institutions (2014-15) of different types approved by Government of India. Such big figure of universities and institutions not possible to analyse at the individual level due short span time hence priority is given to analyse public universities working since long having MOU with INFLIBNET and eligible to receive finance from INFLIBNET including some centrally funded institutions and contributing well to the ETDs in terms of number as deposit of electronic copy to shodhganga repository.

7. Analysis of Data

Analysis has been made from revised ordinances and plagiarism policy instruments website of universities and institutions through the internet. A Scrutiny of earlier published articles in a different database like Indian Journal.com and Google scholar have also used for data collection and analysis purpose.

7.1 Universities with Revised Ordinances

India has 740 universities and university level institutions (2014-15) of which 281 (39.47%) have made MOU with INFLIBNET (Shodhganga e-theses of Indian Universities) majority of them have revised ordinances determined specific procedure for the award of doctoral degree in compliance with UGC minimum standard and procedure for award of PhD degree Regulation 2009 in which main concern is to improve the originality of theses by imposing different measures for award of doctoral research in India.

7.2 Financial Assistance

As per the analysis of list provided by Shodhganga repository (www.shodhganga.ac.in) out of 281 MOU based universities and university level institutions, 163 (58%) have declared eligible to receive financial assistance for deposition of soft copy of theses in shodhganga repository, establishment of ETD laboratory in universities and institutions and providing free anti- plagiarism software for screening of text of PhD theses to check the originality before submission of theses to particular university for the whole country. Remaining 118 (42%) universities and institutions not found eligible to receive financial assistance because they are not fulfilled the eligibility condition of registration under 2(f) and 12 (B) of University Grants Commission Act, 1956. Some of the universities have actively involved putting thesis copies to shodhganga repositories even though they are not receiving finances from INFLIBNET.

Table 1

List of Indian Universities & Institutions with New PhD Ordinances, Anti-Plagiarism tool and Plagiarism Check

Sr No	University / Institution Name	Ordinance Yr.	Tool Use	Plagiarism Ck.
1	Acharya Nagarjuna University	2012	Ternitin/ Urkund	Yes
2	Aligarh Muslim University	2014	Ternitin	Yes

3	Anna University	2015	Ternitin/ Urkund	Yes
4	Banaras Hindu University Varanasi	Yes	Ternitin/Urkund	Yes
5	Bangalore University	2015	Ternitin	Yes
6	Bharathidasan University	2011	Urkund	Yes
7	Birla Institute of Technology & Science Pilani	2013	Urkund	Yes
8	Bundelkhand University Jhasi	2013	Ternitin / Urkund	Yes
9	Chaudhary Charan Singh University	2010	Ternitin / Urkund	Yes
10	Cochin University of Science & Technology	2011	Ternitin / Urkund	Yes
11	Dr. B. A. Marathwada University	2014	Ternitin / Urkund	Yes
12	Dr. Harisingh Gour Vishwavidhyalay	Yes	Urkund	Yes
13	Gauhati University	2015	Ternitin / Urkund	Yes
14	GGSSIP University Delhi	2011	Ternitin	Yes
15	Goa University	2010	Ternitin, i- Thenticate	Yes
16	Gujarat University	2009	Ternitin	Yes
17	Gulbarga University	2012	Urkund	Yes
18	Guru Nanak Dev University Amritsar	2010	Ternitin / Urkund	Yes
20	Indian Institute of Management Calcatta	2013	Ternitin	Yes
21	Indian Institute of Science Bangalore	Yes	Ternitin	Yes
22	Indian Institute of Technology Bombay	2011	Ternitin / Urkund	Yes
23	Indian Institute of Technology Kanpur	2013	I-Authenticate	Yes
24	Indian Institute of Technology Madras	2014	Ternitin	Yes
25	Indian Institute of Technology New Delhi	Yes	Ternitin	Yes
26	J N Technological University, Hyderabad	2010	Ternitin/ Urkund	Yes
27	Jagan Nath University, Jaipur	2010	Ternitin/ Urkund	Yes
28	Jamia Millia Islamia New Delhi	2011	Ternitin	Yes
29	Jawaharlal Neharu University New Delhi	2013	Ternitin	Yes
30	Jiwaji University Gwalier	2015	Ternitin / Urkund	Yes
31	Kashmir University	-	Urkund	Yes
32	Kerla University	Yes	Urkund	Yes
33	Kurukshetra University	2013	Ternitin/ Urkund	Yes
34	M.S.University Tirunelveli	2014	Ternitin/ Urkund	Yes
35	Maharaja Sayajirao University of Baroda	2011	Urkund	Yes
36	Maharashtra Uni. of Health Sciences, Nashik	2013	Ternitin/ Urkund	Yes
37	Maharshi Dayanand University	Yes	Ternitin/ Urkund	Yes
38	Mahatma Gandhi University Kottayam	2014	Urkund	Yes
39	Mangalore University	2014	Ternitin/ Urkund	Yes
40	Manonmaniam Sundaranar University	2013	Ternitin/ Urkund	Yes
41	National Law Schol of India University Bangalore	2013	Ternitin	Yes
42	North Maharashtra University, Jalgaon	2014	Ternitin/ Urkund	Yes
43	North-Eastern Hill University	2013	Ternitin/ Urkund	Yes
44	Pandechery University	Yes	Ternitin/Urkund	Yes
45	Periyar University	Yes	Urkund	Yes
46	Pondicherry University	Yes	Ternitin/Urkund	Yes
47	Pt. Ravishankar Shukla University	2011	Ternitin/Urkund	Yes
48	Punjab University Chandigarh	Yes	Urkund	Yes
49	Punjabi University Patiyala	2015	Ternitin/Urkund	Yes
50	Ravindrabharti University Kolkata	Yes	Urkund	Yes
51	RTM Nagpur University, Nagpur	2012	Ternitin/ Urkund	Yes
52	Sant Gadge Baba Amravati University	2015	Ternitin/Urkund	Yes
53	Sardar Patel University	2015	Ternitin/ Urkund	Yes
54	Savitribai Fule Pune University	2014	Ternitin	Yes
55	SGB Amravati University Amravati	2015	Ternitin	Yes
56	Shivaji University	2014	Ternitin/ Urkund	Yes

57	SNDT Womens University Mumbai	2010	Ternitin/ Urkund	Yes
58	Sri Krishnadevaraya University	2015	Ternitin/ Urkund	Yes
59	Sri Venkeateswara University Tarupati	2015	Ternitin/ Urkund	Yes
60	Tata Institute of Social Sciences Mumbai	2013	Ternitin	Yes
61	University of Burdwan	2010	Ternitin/ Urkund	Yes
62	University of Calicut	2015	Ternitin/ Urkund	Yes
63	University of Delhi	2014	Ternitin, i- Thenticate	Yes
64	University of Hyderabad	Yes	Thenticate	Yes
65	University of Kashmir	2012	Ternitin/ Urkund	Yes
66	University of Mumbai	2012	Ternitin/ Urkund	Yes
67	University of Mysore	2010	Ternitin/ Urkund	Yes
68	Visvesvaraya Technological University, Belgaum	2016	Ternitin/ Urkund	Yes

7.3 Coursework & User Awareness Programmes on Plagiarism

The universities and institution have conducting coursework before commencing admission to the PhD. A coursework is prior training on understanding basic methods of research, technique of data collection, review of related literature, computer application and awareness regarding plagiarism, plagiarism problems, technical aspect of anti-plagiarism tools, maintenance and avoids of plagiarism, proper lifting and copying of text. Some of universities such as Jawaharlal Nehru University New Delhi, Bundelkhand University, Jhansi, Guru Nanak Dev University Amritsar, Tezpur University, and Pondicherry University conducted user awareness workshop in association with INFLIBNET centre to aware plagiarism issue. A coursework is most important prerequisite for PhD in Indian universities and provision have been made in the ordinances to aware the stakeholders regarding plagiarism and related issues in almost all universities and institutions. Trial on anti-plagiarism tool, legal & ethical issues such as copyright and other Intellectual Property Rights, Patents, presentation, bibliography, impact factor, referencing & citations, writing abstracts and manuscripts were the course elements.

7.4 Separate Plagiarism Policies at Institutional Level

The University of Poona, J N University, Jaipur, Indian Institute Technology Kanpur, Indian Institute Technology Kharagpur, Indian Institute Technology Mumbai, Calicut University, Jawaharlal Nehru University New Delhi, Indian Institute Technology Delhi, Gujarat University Ahmadabad, Punjab University Chandigarh etc have separate plagiarism policies at their institutional level giving serious concern to keep away plagiarism related malpractice. This plagiarism policy instruments of individual institutions defined plagiarism act, negligence of plagiarism, identification and assessment of plagiarism, Plagiarism methods, plagiarism counselling, alleged plagiarism cases and admissible percentage.

7.5 Plagiarism Detection Criteria

The stringent measures for the plagiarism detection are applying by some of universities in India and scholars have mandate to submit anti-plagiarism software generated report through declaration in prescribed pro-forma decided by the universities and institutions. Few universities (one or two) getting draft affidavit containing text in the theses written for doctoral research is original contribution and plagiarism free before submission of theses to the universities. The *JN University, Jaipur* provided that “The exclusion at the time of performing the check is limited quotes, bibliography, phrases small matches up to 10 words, small similarity less than one percent, mathematical formula and name of institution and the department” are exclusion while scanning PhD text. Reconciliation in plagiarism, while showing result of similarity of text in the thesis to the original source not more than 20% if acknowledged in appropriate manner and original source is cited correctly is considered admissible limit for research purpose. *Gulbarga University* considered 30% limit for the plagiarism content detected, beyond 30% scholars have to resubmit theses for plagiarism checking. *University of Calicut*, range of acceptance level of plagiarism for introduction and review of literature is 30% for the science and applied science subjects and 35% for other subjects, research material and method the limit is 25% for all faculties and results/discussion/ findings 10% permissible limit if followed proper methods. *Jawaharlal Nehru University New Delhi* has thesis tracking system adopted systematic approach to plagiarism detection since 2012 scholars have mandate to scan theses using plagiarism tools. Maharashtra University of Health Sciences, Nasik, Manonmaniam Sundaranar University Tirunelveli, IIT Madras, Indian Institute of Science Bangalore, GGSIP University New Delhi Dr Babasaheb Ambedkar Marathwada University Aurangabad, Sri Venkateswara University, GND University Amritsar, Panjabi University Patiala, Anna University, North Maharashtra University, Jalgaon, Savitribai Fule Pune University, Acharya Nagarjuna University, University of Mysore, IIT Mumbai have taking care plagiarism check through anti-plagiarism tool to maintain originality and protect plagiarism misconduct.

7.5 Provision of Punishment/ Penalty through Legal Instrument

While analysing the content of varsity ordinances and text on websites reveal that Indian universities and institutions took adequate provision of penalties/ punishments in the ordinances. Rules prepared with proper and appropriate manner at institutional level are well designed, provision of punishment in copyright law, government regulations issued and case laws settled by Supreme Court of India and decisions of high courts within the country shows adequate provision to protect the act of plagiarism. Penalties have different range of action depending upon the severity and seriousness of act. Dishonour individual and institutions, debarment from eligibility to receive research funds for grants and contracts from any government agency in India, monetary penalties, compensate for the loss of profit of the original writer, sometimes penalties can include criminal punishments and imprisonment also. The earlier parts this study has cited example of plagiarism malpractices and punishment thereof in Indian context shows its proper implementation in some cases someone was found guilty. It is well accepted fact that some of universities have separate

plagiarism policies provided in ordinances and separate rules with proper approval that purposeful copying of another work shows the evidently the text in thesis is absolute copy of other work or doctoral degree already been awarded the concern scholar doing doctoral study may be punished to registration cancellation for the high level plagiarism on the recommendation of enquiry committee appointed and provision made in the ordinances for the scholars and guide ship cancellation for the supervisor. *Sant Gadge Baba Amravati University* has made provision of punishment as cancellation/ withdrawal of doctoral degree and fine of minimum Rs 10000/- and remark in the service book record of scholars if found guilty of full plagiarism in thesis suitably applicable. The *Bundelkhand University Jhansi*, PhD scholar have mandate to make presentation for its progress of every six month before the Research Development Committee (RDC) failing to presentation with any genuine reasons his/her registration may cancelled on the recommendation of RDC. *University of Pune* has a provision for plagiarism as fine, warning, rustication and withdrawal of degree. Gujarat University Ahmadabad is provided that “duplication or plagiarism or piracy occurring in the thesis in case any such acts are detected even after the award of the degree the student shall be held accountable for the irregularity and this may even lead to cancellation of the degree” the examples quoted here are representative, provision of penalty more or less found elsewhere in the universities and institutions in India. It is accepted the fact while analysed the ordinances of some universities listed in table one (the list is not exhaustive) not spelt out clear plagiarism policies for doctoral research in the ordinances and rules spelt out separately. Indian copy right act 1957 (amended time to time) punishment for the first infringement imprisonment for 6 months to 3 years and fine Rs. 50,000/- to Rs. 200000/- subsequent convictions fine Rs 100000/- to Rs.200000/- and infringement imprisonment for 1 to 3 years according to severity of the misconduct.

7.6 Use of Anti-plagiarism Tool

Practice of anti-plagiarism tool for similarity checking in Indian university theses has been initiated with initiative taken by INFLIBNET centre on behalf of University Grants Commission (an apex body of higher education Government of India) so far 100 of universities have provided free anti-plagiarism tools namely *Ternitin & i-Thenticate* for the trial basis for specific period on satisfactory performance. During this year around 980 instructors and 400 students have been registered among all universities and around 12000 submissions took place for plagiarism screening and 3300 submission were inside green limit within range of 25% (Suseela, 2016). Whatever anti-plagiarism tool they are applying whether it is *ternitin i-Thenticate or Urkund* or any other standard software the basic functionality is to detect similarity in manuscript, uploaded to crawl online published literature and compare the uploaded manuscript to detect similarity in the text with already published content online may be full text papers, reports, books, abstracts proliferated in digital form and quantifying the similarity in the reports, signifying the percentage and the sources overlapped during screening. While writing this paper, author *observed ternitin & i-thenticate (www.iparadims.com)* tools are used for screening by Indian universities and institutions. *Ternitin* is cloud based service developed by i-paradigm to advance the student learning and evaluation is now being using over 15000 institutions and universities in 140 countries in the world to supervise student’s works like assignments and tracking the student progress and evaluation for maintain originality of documents. It processes over 300000

papers per day and 600000 papers on pick days altogether the figure encompassed over 100 millions submissions facilitate search in nineteen major languages worldwide and incorporate with more than fifty course management system. Originality check is done by validating most authenticate published literature, quantifying the similarity in percentage show green limit up to 24%, yellow to brown 25% to 74 % and red for 75% to 100 % from among the widespread databases connected to it belong to licensed based full text content of leading publishers' databases, books, subscription base journals and other publications, digital documents and over 130 millions free papers from Sage, Emerald, Crossreference.org, EBSCO Host and Gale CENGAGE learning. Moreover, 45 billion web pages and repository documents archived non licensed content. Students' papers is consider as major source for detecting plagiarism/ similarity checking this may goes up to 50 % as students' works already submitted crossed limit of 337 millions in *turnitin database* and growing by 190000 papers per day in an average. I-Thenticate checks more than 40 million publications through cross check service and make comparison millions of abstracts and citations PubMed and more than 20000 research titles from EBSCO host and Gale InfoTrac One file and also 300000 theses and dissertations from ProQuest. The Urkund another Swedish anti plagiarism tool is more option accepted for screening PhD thesis text in Indian Universities recently by the INFLIBNET for all Indian Universities.

8. Findings

- a. Practice of anti-plagiarism screening to doctoral theses in Indian universities is recent phenomenon is going successfully to detect plagiarism. India has in extremely primary stage in the use of anti-plagiarism tools compare to other countries in the world. Presently 100 universities and majority of centrally funded institutions so far using anti plagiarism tools for screening the text of PhD theses. Some well established state universities including some central universities are better functioning while large number is logging behind to check the originality. Reasons are different. Centrally funded institutions belonging to institution of national importance in the category of IIT's and other national institutions are little bit better in the use of originality checking of text in theses using anti-plagiarism tools. The INFLIBNET centre is playing the pivotal role make theses as electronic copy to the shodhganga thereby developing large database of Indian theses will be the boon for anti-plagiarism screening of doctoral theses across the country for the coming years.
- b. India annually produced 22849 PhD's (UGC,2013-14) and more than 77000 theses in all disciplines are ongoing in which most of PhD theses are written in regional languages like *Marathi, Hindi, Telugu, Tamil, Urdu, Kannad, Bengali, Gujarati*, etc (total 22 Indian regional languages have been recognized by Indian Constitution). Ph.D. theses written in Indian regional languages cannot so far processed by any standard anti-plagiarism tools which are most significant part of Indian doctoral research output. World's largest used and prominent anti-plagiarism software tool namely *turnitin* can able to scan only nineteen languages, majority of them are the languages of western world where Indian vernacular languages have no place in screening the text therefore it is difficult to detect plagiarism is big challenge for the whole country in the coming years.

- c. Most of theses in Indian universities and institutions, prior to enforcement 2009 regulation is only in print media stocked in libraries either no use or hardly used , they are not deposited any repository online for access therefore it were not became part of online text in any databases. Any anti-plagiarism tools cannot process such big data of traditional theses screening purpose, the reason is oblivious they are off line. Only 100000 doctoral theses both *Shodhganga* other institutional repositories mostly research institution and CSIR laboratories and few traditional and deemed universities listed in Open DOAR are online so far , even though some are online but they are scanned images files of PhD theses are impossible to scan image file to detect plagiarism/ textual similarity purpose by any anti plagiarism tool.
- d. The majority of new entrants to the doctoral research have no clarity on the ethical issue; most of them are untrained, inexperienced, ignorant and innocent. All they feel that information published in all forms in the world is available free of cost for all and stealing anything is not matter for them. Due to not awareness of copyrights, intellectual property rights, ownership and fair use, not aware fully research methodology techniques and use of citations do copy of other works unintentionally. This ignorance not adequately monitors in majority of cases and unintentional plagiarism occurred in most of theses.
- e. Majority of universities having revised PhD ordinances lacking explicit plagiarism policies such as anti-plagiarism screening certificate and other associate criteria. Similarly information literacy has to play big role on ethical and for making effective use of scholarly information taken from outside source, validate and evaluate the source, synthesize the source and apply the source in order to remove plagiarized patches and paragraphs not channelized in the most revised ordinances of universities. Information literacy is lacking component should be compulsory part of syllabi during coursework conducted. The scholars have to train of citation management tools such as *Mendeley*, *Zotero*, *Endnote*, *Ref-Work* may be used in electronic / digital information environment as improvable measures for research writings in universities
- f. Status regarding the use of specific anti-plagiarism tool is concern universities in India is considerably used Turnitin and iThenticate anti-plagiarism tools now switched over to *Urkund* an another anti-plagiarism tool.
- g. Practice of intended plagiarism to the doctoral theses seems to be augmented due to peer pressure like Ph.D. as the basic and entry qualification for appointment of assistant professor other academic positions in Indian universities and its affiliated colleges. The students recently pass out hurriedly enrolled themselves for doctoral study without being of adequate familiarity and keen interest to the research, they don't understand thesis writing is not a hurry up activity require some time span to draw the real and contemporary findings, due to this tendency quality suffers make anti-theses situation.

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