Academic integrity: looking beyond plagiarism

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Plagiarism is a growing concern for academia across the globe. Several factors influence the behaviour of the researcher towards plagiarism. The UGC (Promotion of Academic Integrity and Prevention of Plagiarism in HEIs) Regulation, 2018 was notified to promote academic integrity in HEIs and curb plagiarism. However, this regulation has many gaps which need to be addressed in the quest for achieving academic integrity. This paper is an attempt to identify these gaps in the regulation. It also attempts to address the over reliance of academic fraternity on Plagiarism Detection Tools.

**Keywords:** Plagiarism; Academic Integrity; Higher Education; India

**Introduction**

The Indian academic regulatory body, the University Grants Commission (UGC) came out with Regulations on Promotion of Academic Integrity and Prevention of Plagiarism in Higher Education Institutions in the year 2018. The regulation came in the light of several cases of plagiarism that were reported in the media. Several Vice Chancellors of universities, Heads of institutions and well-known Indian scientists were reported to plagiarise from other research works in their publications\(^3\). These reports compelled the UGC to take concrete steps and frame guidelines to address the issues and challenges of research integrity.

The purpose of the regulation is not only to control plagiarism but also to achieve quality in academic output by Indian academic community. The regulation mandates to pass every research output through a plagiarism detection tool before being accepted for the award of a research degree and / or for publication. Though the guidelines are issued to address plagiarism, the focus is, unfortunately, on the similarity index as generated by a plagiarism detection software (PDS) provided by the UGC to all Indian Universities under their service Shodh Shuddhi (roughly translated as Research Purification) [https://shodhshuddhi.inflibnet.ac.in/]. This has caused much apprehension among researchers/scholars about the entire procedure of research writing.

This paper is an attempt to review the procedure of academic scrutiny adopted by various institutions including the publishing industry, the apprehensions associated with plagiarism checks, the issues related to plagiarism detection tools and suggestions to bring clarity and improvement in the UGC Regulation, 2018 on Promotion of Academic Integrity and Prevention of Plagiarism in Higher Education Institutions\(^3\) which will be referred as UGC Regulation, 2018 in this discussion. Also, throughout this paper the term researcher will be used as a catch-all term to include students pursuing research degree, faculty and scientists.

**Plagiarism: crushing the shoulders of giants**

Plagiarism is now a major threat which plagues the academia. It has become a common means of achieving easy higher grades, position and different kind of academic credits without acknowledging the work of others. Many a times the research work created is not at all original but is a complete replica of other’s work in a modified way, to dodge the professionals’ as well electronic means such as plagiarism detection software (PDS). This begs the question what motivates researchers, faculty and students alike to resort to such blatant infringement of works of their peers.

According to various studies, several factors influence the attitude and behaviour of researchers towards plagiarism. Pressure from peer\(^2\), gender, academic discipline\(^4,5\), desire for a higher grade/position\(^6\), demography, personality and situational factors\(^7\), etc. are found to have influence in the
behaviour of researchers towards plagiarism. Approach of the supervisor towards their research scholars is also an influencing factor to commit plagiarism\(^8\). Peer beliefs/behaviour towards plagiarism also influence the attitude of a researcher towards plagiarism\(^9\).

Procrastination, the act of delaying a work due to lethargy or any other reason, has been reported as one of the reasons leading to academically dishonest practices including plagiarism among researchers\(^10,11\). The tendency of denial or delaying/postponing by the researchers leads to improper time management, affecting deadline and imposing greater pressure on them. When a deadline approaches for the submission of the thesis, students get worried and start looking for an easy way out. Similar is the case with university faculty who aim for promotions.

In India, UGC implemented Academic Performance Indicators (API) schema in the year 2010\(^12\) to enhance the research output. Time bound promotions were permitted if the faculty produced scholarly output in the form of journal articles, theses, books, conference proceedings, projects, etc. These regulations were subsequently amended in the years 2016 and 2018 respectively. However, these regulations are totally disconnected from the ground realities of Indian universities.

The infrastructure in many universities especially state universities and even some newly instituted central universities is wanting. Many faculty vacancies go unfilled for years, though the number of seats for admission into courses keep increasing, as a result the teacher-student ratio in Indian universities is skewed and teachers are overloaded with teaching hours in addition to hours they need to spend on preparing for their lectures. In such a scenario, expecting researchers especially university faculty to produce several original, innovative, and ground-breaking research publications within a span of limited period is quite unrealistic. Hence, this created an unprecedented rush to publish that led to overproduction of plagiarised text and saw a rise in predatory journals as well, thereby tarnishing the image of scholarly community in India\(^13\).

Realizing the grave situation of academia, UGC brought several amendments to the regulation including the UGC CARE list of journals\(^14\) to tackle the predatory journals. It also brought into force the UGC Regulation, 2018 to deal with growing cases of plagiarism and enhance academic honesty. However, the damage was already done in the international scenario and Indians list amongst the top contributors in fake as well as predatory journals\(^15,16\).

Unethical academic conduct is also attributed to cultural difference. Demography\(^17\), ethnicity and acculturation\(^18\) are also reported as factors influencing plagiarism among students. Globalization of education enabled diversified student population in terms of ethnicity and culture. In accordance with culture-conflict theory, if students accept the notion that everyone in their culture (i.e., college) cheats, they will be more likely to engage in this behaviour\(^19\). The dichotomy between cultures\(^20\) which has been confirmed in several studies\(^21,22\), lead to diversification in the understanding or perception towards what may fall under the purview of “cheating and plagiarism”\(^23,24\). Pratt and McLaughlin (1989)\(^25\) reported that students believe they have higher standards than their peers, but they feel compelled to cheat because they feel their peers are cheating.

Many studies also suggest that students following un-ethical approaches have less confidence in their writing skills\(^26,27,28\). The problems faced by non-native speakers of English language in research writing were discussed by many researchers\(^29\) and added a broader perspective to define plagiarism\(^30\). However, even for native speakers of English language, the capability to understand and paraphrase a given concept or idea would vary. Many researchers would struggle to express their thoughts into words even after comprehending the already existing text. Sometimes, the existing text is so well expressed that it becomes difficult to retain the meaning after paraphrasing. Also, a researcher may find it unnecessary to paraphrase when a thought is already well expressed. They would probably prefer to quote and cite rather than paraphrasing. But there exist no standard norms to decide about the extent of direct quotes acceptable within a given write-up. The UGC Regulation, 2018 also do not address this concern.

Moreover, present educational setup does not mandate for a smooth transition from a student to a researcher. Even though the course curriculum is designed in such a way to facilitate such transformation, however, at implementation level, the situation is very different. Many students when they enrol for research find themselves clueless about various facets of research writing such as quoting and
relying and their importance in avoiding allegations of plagiarism. Also, educational background which did not involve extensive writing for assessment and/or did not place an emphasis on self-expression in writing would lead to delays in acquiring authorial acumen\textsuperscript{31}. Hence, unintentional plagiarism occurs which the researchers get to know only at the time of final submission of their thesis. UGC has introduced a six-month coursework to train researchers in the research process as part of the doctoral programmes in universities\textsuperscript{32} and a compulsory pre-PhD course on Research Publication and Ethics in 2019\textsuperscript{33}, but the scenario is yet to improve.

It is not an overstatement to say that lack of strong academic integrity policies encourages plagiarism in academics. It is reported that that weaker academic integrity policies makes researchers more susceptible to fall for dishonest practices as the punishment do not outweigh the benefits incurred out of such misconduct\textsuperscript{34}.

The factors discussed above have strong influence over developing positive attitude towards plagiarism among scholars which is a significant indicator of intention to plagiarise\textsuperscript{35} and engage in dishonest academic practices.

**The UGC Regulation, 2018 at a glance**

Responsible research conduct has been prioritized by several research agencies in their guidelines. These include ICMR’s Policy on Research Integrity & Publication Ethics\textsuperscript{35}, CSIR Guidelines for Ethics in Research and in Governance\textsuperscript{36}, Draft National Policy on Academic Ethics by Office of the Principal Scientific Adviser to GoI (PSA)\textsuperscript{38} including the UGC Regulation, 2019\textsuperscript{32}. These guidelines though have different trajectory, they all converge to the same objective i.e., “to educate and train Indian scholars in handling academic integrity and scientific conduct matters”\textsuperscript{38}.

As the present study aims to provide insight about the academic integrity scenario in Indian Universities, it is important to comprehensively analyse the UGC Regulation, 2018. The continuing discussion becomes even more important since the UGC regulations are adopted in toto by most of the Universities with no improvisation to address the various issues that may arise during a research process.

Research writing is an important aspect during a research process which requires strategy and acumen to explicitly represent the research process. During literature review, a scholar is expected to organize the pre-existing knowledge about his/her research area. A properly referenced text is not considered as plagiarised but the question of extent of usage of quoted text or referenced text allowed in a given document remains unanswered. Sometimes, even the properly quoted or referenced text leads to higher similarity index. This area is very less discussed among research fraternity and clear guidelines to deal with needs to be implemented in the UGC regulations.

Secondly, it is very frequent in some disciplines, particularly Science, Technology, Engineering and Medicine (STEM) to publish the outcome of their research in the form of research articles, reports or conference proceedings prior to reporting it in their theses or dissertation\textsuperscript{45}. Another practice which is also very common in all disciplines is publishing research articles, books, book chapters based on their submitted thesis or dissertation. Self-plagiarism guideline of UGC\textsuperscript{41} includes reproduction or text recycling of researcher’s own published work without appropriate citation as plagiarism. However, as discussed previously, the extent of referenced text acceptable within a document is yet to be explained to classify and consider the submitted document as new or original work. The self-plagiarism guideline suggests expert intervention which would vary depending on their experience in the subject field. The judgement may be biased owing to professional alliances or obligations.

The UGC Regulation, 2018 suggests implementation and availability of technology-based mechanism to ensure that the submitted document (thesis/dissertation/research articles) is plagiarism free. Several plagiarism detection software (PDS) are available for the purpose of plagiarism check. The competency and reliability of such software depends upon the size of the database which ultimately affects its costing. A PDS with larger database would be more efficient but costly. The precision value of the similarity index percentage produced by such PDS would be much higher, so is the reliability of their analysis report. However, the cost of such highly efficient tools would prevent many small institutions and Universities (not supported by UGC or AICTE) to opt for a cheaper but less reliable option. Also, the normalization of varying similarity index from various PDS for a given document is required to be discussed and implemented in the UGC regulations.

It is very commonly observed that most of the publishers, academic institutions, administrators take the similarity index values as the only criteria to
accept or reject a piece of research without studying objectively the analysis report generated by their preferred PDS. Weber-Wolff D\textsuperscript{42} has identified several anomalies in the similarity analysis report by a PDS. She states that the analyses produced by this software are hard to interpret, navigate and often generates false similarity for the texts. Common phrases, name of the journals/institutions, generic names, standard tools and techniques, equations, theorems, scientific terms, bibliography, etc. may lead to higher similarity index. A detailed discussion on Plagiarism detection software is presented in the next section with suitable examples.

Taking cognisance of the fact that similarity index generated by a PDS may be taken ‘as is’ to decide the fate of a prospective publication or theses / dissertations submission, the UGC Regulation, 2018 has laid out explicit guidelines for the exclusion of such text from the analysis by the PDS which may return a high similarity index. The regulations specify the exclusion of following front matter elements of the thesis:

- All quoted work reproduced with all necessary permission and/or attribution.
- All references, bibliography, table of content, preface and acknowledgements.
- All generic terms, laws, standard symbols and standards equations.
- Common knowledge or coincidental terms, up to fourteen consecutive words.

Despite the clear guidelines available, the researchers are compelled to revise and resubmit their theses or dissertation if the similarity index is beyond 10% due to the factors listed above.

**Plagiarism detection software (PDS): Not a panacea to plagiarism**

Several free and commercial tools are available to check plagiarism. These tools work on advanced pattern matching algorithms to compare the content of the submitted document against a set of documents/databases and produce similarity index/percentage based on matching text. The UGC regulation, 2018 mandates using Plagiarism detection tool (software) by higher education institutions in India to curb plagiarism.

A PDS is an effective tool to identify plagiarism but then one cannot completely rely upon their analysis. A PDS may report high similarity index due to several reasons:

a. Some studies are based on secondary data or survey data based on a standard scale. Such studies may have repeated references to the common headers or terms such as name of banks (commerce/finance), villages/ethnicity (sociology), etc. in the text [Figures 1(a) & (b)] which can lead to higher similarity index. Also, these tools invariably flag for subject jargons and common phrases [Figure 2]. These are some very common issues which make it necessary for another level of scrutiny involving a thorough and careful investigation by the subject experts\textsuperscript{43}.
These tools are still in early developmental stage when it comes to dealing with documents in Indian Languages.

The accuracy of the similarity index percentage depends on the size of the PDS database and it is impossible for a PDS to cover/index all the information that exists on the web especially those existing behind the pay-wall, deep web or the text in image format. Thus, similarity index would vary from one PDS to another. No single library in the world can accommodate all the publications of the world, likewise no single PDS can be expected or will have all the publications in its database.

There are and will be cases of plagiarism from print-only documents. PDS cannot handle these unless they are digitized.

There is no defined timeline for the validity of the similarity index percentage yielded by a PDS for a given document. The percentage would vary as and when more documents are included in the database of the PDS [Figures 3 (a) & (b)].

Realizing the fact that there could be justifiable reasons to account for the higher percentage of similarity index for a document, developers of Plagiarism Detection Software (PDS) have adopted a neutral approach and do not use the term “plagiarism index” for the similarity index.
detected for a document. Instead they call it “Similarity Index”. The similarity index may vary for each document. It is a well-known fact in the academic circles that 0% similarity index does not necessarily mean that a document is free of plagiarism and vice versa. Hence, the similarity index cannot be taken as the only indicator to identify plagiarism.

g. The acceptable limit for a document’s similarity index will vary depending on the type of research being carried out. For historical research the similarity index would be high as the objective of historical research is to explore the historical aspects of the topic and would rely a lot on review of literature and secondary data. On the other hand, experimental research would focus on reporting the lab setup and the outcome of the research carried out with only a passing reference to the work already done in the field.

These few examples suggest that a PDS, though effective, has its own limitations. Hence, complete reliability on the similarity index generated by these tools would not serve the purpose of curbing plagiarism.

Suggestions and conclusions

Plagiarism has become a huge challenge for every Indian university. Regulations and different measures have been adopted to check for plagiarism. But it is also true that these measures have their limitations and are not completely efficient to control plagiarism. One needs to understand that plagiarism is entirely a matter of an individual’s morality and ethics. Any kind of punishment or restriction generates apprehensions but does little to promote integrity within an individual.

As discussed earlier, several factors would influence a researcher’s attitude towards plagiarism. Therefore, it is necessary to ascertain the intent of the researcher while making any final decision on his/her works. In today’s competitive environment in the job market as well as research funding, students and researchers have become less scrupulous. It is important that a researcher should be taught about plagiarism at the earliest and trained to develop their ability to understand and comprehend knowledge. This would enable them to think critically and research effectively for the development of society.

It has been pointed out that even though universities are often very explicit about penalties against plagiarism, they are not aware of the fact that their students/researchers are not trained sufficiently in referencing techniques. As stated earlier, the Indian Universities have a compulsory course on research methodology and ethics, but it is mandatory only for the researchers. There is a need to develop a dedicated system to inculcate academic integrity among young scholars.

The young scholars must be groomed for higher morality and ethics at the very earlier stage of their education; else the problem of plagiarism will persist in academia. For this, we need to create awareness about academic integrity at the very initial stage of education (preferably at school level). The present-day school education system which is highly focussed on STEM disciplines puts a lot of pressure on students to achieve academic merit at any cost. Fundamental changes in the way education is imparted in schools are required. Emphasis on ethics, morals and professional conduct is required than simply achieving high scores in subjects. Students need to be taught that how high scores are achieved is more important than achieving high scores. We need to get back to the basics that the means is as important as the end.

Another issue pointed out is that of the standardized practice of research writing as it inhibits
the independent thinking of a scholar as they need to legitimize their thoughts through the writings of others\textsuperscript{44}. The researcher must be encouraged not only to develop their own thoughts but also acquire additional academic writing training especially in English language, which is considered as international language of research, for non-native English speakers. This will help them to be more confident about their capabilities and would not fall prey to wrongful means such as plagiarism.

The UGC also need to rationalize the similarity index percentage according to the varying disciplinary perspectives. For example, in literature studies, interpretations of other authors’ works may require a substantial amount of the original text to be quoted as is. Here quoting the original text is essential part of the interpretation. The same is observed in writings of legal texts. Interpretation of the laws requires quoting of the original text to bring in the context. Also, the permissible amount of quoting and referencing in a research document from one single document is a matter to be discussed by the subject experts while evaluating the originality of the research work.

The role of university authorities/administration and how proactively they work to achieve academic integrity in their respective institution is of utmost importance. It has been reported that even after the UGC Regulation, 2018, many Universities did not update their research methodology course for advocacy of academic integrity and plagiarism until the introduction of compulsory pre-PhD course on Research Publication and Ethics\textsuperscript{39}. Such casual approach by the implementing authorities defeats the entire purpose of any policy or regulation and retards/corrupts the entire process of research.

The role of university administration to create a suitable environment is extremely important for promotion of academic integrity among researchers. They must ensure to continuously upgrade their policies and strategies to deal with the issue of plagiarism given the fact that there exists no standard strategy or policy to deal with plagiarism. The universities must not shy away from reporting cases of plagiarism and the strategies/penalties levied upon the scholar. This will not only set an example for the new researchers to follow fair practices in research but also encourage other academic institutions to set the path for promotion of integrity in research.

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