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Awareness and use of anti-plagiarism software for quality: Research by the research scholars of UAS, Bangalore and UAS, Dharwad in Karnataka: A study

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Abstract
Due to rapid development in Information Technology, the Internet has brought tremendous changes to the academic and research world. Large number of research scholars are turning to the Internet for readymade solutions and shortcuts for writing research papers, assignments and thesis. According to research ethics, scholarly world revolves around ethics and integrity, where new ideas and theories are created, confirmed and re-confirmed, experiments and research works is carried and published for the benefits of the humanity, with a genuine desire of acknowledgement. In the process of writing research articles and books, authors tend to copy existing content from other subjects without paying due acknowledgement to the original work. This results in violating copyright law and plagiarism. The best way to maintain quality in research is to pay gratification and acknowledge to the original work. The research scholars should be given hands on training on various citation and referencing styles. The research scholars must use anti plagiarism software to check similar content and rectify the error in quality research.

Keywords: plagiarism, reference style, anti-plagiarism software, research quality

1. Introduction
The Information Technology has grown so faster that the information has become easily accessible by everyone from everywhere via internet which makes the issue of plagiarism even more challenging to the academic corpus like teachers and researchers in the electronic era. Plagiarism is considered academic dishonesty and a breach of ethics. It is subject to sanctions such as penalties, suspension, and even expulsion from academic institutions. Recently, large number cases of "extreme plagiarism" have been identified in academic environment. The most common types of plagiarism found in researchers are submitting another's work as own, copying portion of text from a single or multiple sources without alterations, paraphrasing from multiple sources and linking together, mixture of copies materials from multiple sources, combining perfectly cited sources with copied passages without citations, including citations to non-existent or inaccurate information about sources, publishing own article again with small changes, URL link errors etc. Large number of commercial and free online software are available which help to detect plagiarism. The research scholars must make use of these types of anti-plagiarism tools. They should also use online reference management tools for providing proper citations and references in their research publications and thesis. The researchers have conducted this study to know the awareness and use of anti-plagiarism software for quality research by the research scholars of University of Agricultural Sciences, Bangalore and University of Agricultural Sciences, Dharwad in Karnataka State.

2. Objectives of the study
The objectives behind conducting the present study are
1. To assess the attitudes of research scholars towards use of anti-plagiarism software.
2. To know the purpose of use of anti-plagiarism software.
3. To find out their familiarity with citing methods and reference styles.
4. To know the reasons for publication work and the repercussions of plagiarism.
5. To investigate the factors of awareness about plagiarism and activities leading to plagiarism.

3. Scope, Limitations and Methodology
The scope of the study is restricted to know awareness and use of anti-plagiarism software for quality research by the research scholars of UAS, Bangalore and UAS, Dharwad in Karnataka. The survey method was adopted, using questionnaire as a tool for data collection. A structured questionnaire was designed and distributed among research scholars. Out of 158 questionnaires distributed, 131filled in questionnaires were received back amounting 82.91%. In addition to questionnaire method, interview schedule were also used to collect required information as a supplement to the questionnaire method. The collected data has been analysed and interpreted.

4. Analysis and interpretation of data
The data collected by different methods were analysed, interpreted and the same has been presented in the following tables.

4.1 Gender-Wise Distribution of Research Scholars
The gender wise distribution of research scholars has been shown in Table-1. The Table-1 shows that out of the 131 research scholars, 72 (54.96%) are male and the remaining 59 (45.04%) are female.

Table 1: Gender-Wise Distribution of Research Scholars

Gender Department	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
Male	43 (55.84)	29 (53.70)	72 (54.96)
Female	3 (44.16)	25 (46.30)	59 (45.04)

The Table-1 also depicts that 43 (55.84%) of research scholar in UAS, Bangalore are Male and 29 (53.70%) of research scholar in UAS, Dharwad are Female. About 34 (44.16%) of research scholar in UAS, Bangalore are Male and 25 (46.30%) of research scholar in UAS, Dharwad are Female.

4.2 Age-wise distribution of research scholars

The age wise distribution of research scholarshas been shown in Table-2. Table -2 depict that 39 (29.77%) of research scholars belong to the age group of'26-28' years, followed by 34 (25.95%) of research scholars are of '29-31' years, about 22 (16.79%) of research scholars belong to '32-34' years of age, 20 (15.27%) of research scholars are of '23-25'years of age group and only 16 (12.21%) of research scholar are of 'Above 35' years.

Table 2: Age-Wise Distribution of Research Scholars

Age Department	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
23-25	12 (15.58)	08 (14.81)	20 (15.27)
26-28	26 (33.77)	13 (24.07)	39 (29.77)
29-31	16 (20.78)	18 (33.33)	34 (25.95)
32-34	14 (18.18)	08 (14.81)	22 (16.79)
Above 35	09 (11.69)	07 (12.96)	16 (12.21)

The Table-2 also depicts that, 26 (33.77%) of research scholars from UAS, Bangalore belong to the '26 -28' years of age group and 18 (33.33%) of research scholars from UAS, Dharwadare of '29-31' years of age.

4.3 Familiarity and use of reference styles

The familiarity and use of reference styles has been shown in Table-3. The Table-3 depicts that 115 (87.79%) of research scholars opine as 'Yes' towards familiarity with reference styles and 16 (12.21%) of research scholars opine as 'No' towards familiarity with reference styles.

The Table-3 also depicts that 75 (65.22%) of research scholars use APA referencing style, followed by 73 (63.48%) of research scholars use JFS / KJAS, 63 (54.78%) use Chicago, 42 (36.52%) use MLA, 14 (12.17%) use IEEE, 13 (11.30%) of research scholars use other styles like Turabian, Harvard, CSE Style etc.

Table 3: Familiarity and Use of Reference Styles

Opinion Department	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
Familiarity with Reference Styles			
Yes	66 (85.71)	49 (90.74)	115 (87.79)
No	11 (14.29)	05 (09.26)	16 (12.21)
Chi- Square= 74.817, df is 1, P=0.0001, Significant at p < .05.			
Use of Reference Styles			
APA	42 (63.64)	33 (67.35)	75 (65.22)
MLA	18 (27.27)	24 (48.98)	42 (36.52)
Chicago	35 (53.03)	28 (57.14)	63 (54.78)
IEEE	09 (13.64)	05 (10.20)	14 (12.17)
JFS / KJAS	32 (48.48)	41 (83.67)	73 (63.48)
Others like Turabian, Harvard, CSE Style	05 (07.58)	08 (16.32)	13 (11.30)

Chi-Square: 83.68, df is 5, P=0.0001, Significant at p < .05
Multiple Choice Question

The Table-3 also depicts that 66 (85.71%) of research scholars from UAS, Bangalore and 49 (90.74%) of research scholars from UAS, Dharwad opine as 'Yes' and 11 (14.29%) of research scholars from UAS, Bangalore and 05 (09.26%) of research scholars from UAS, Dharwad opine as 'No' towards familiarity with reference style. The Table-3 also depicts that 42 (63.64%) of research scholars from UAS, Bangalore use APA referencing style and 41 (83.67%) of research scholars from UAS, Dharwad use JFS / KJAS referencing style.

4.4 Extent of Familiarity with Reference Styles.

The extent of familiarity with reference styles has been shown in Table-4. The Table-4 depicts that 46 (40.00%) of research scholars opined the extent of familiarity with reference styles asvery high, followed by 33 (28.69%) of research scholars opined as high, 31 (26.95%) of research scholars opined as moderate and 05 (04.35%) of research scholars opine extent of familiarity with reference styles as low.

Table 4: Extent of Familiarity with Reference Styles.

Extent of Familiarity	UAS,B (N=66)	UAS,D (N=49)	Total (N=115)
Very High	21 (31.82)	25 (51.02)	46 (40.00)
High	23 (34.85)	10 (20.40)	33 (28.69)
Moderate	18 (27.27)	13 (26.53)	31 (26.95)
Low	04 (06.06)	01 (02.04)	05 (04.35)

The Table-4 also depicts that 23 (34.85%) of research scholar opine as high towards extent of familiarly with reference style from UAS, Bangalore and 25 (51.02%) of research scholar opine as very high about extent of familiarly with reference style from UAS, Dharwad.

4.5 Reasons for Publishing.

The reasons for publishing has been shown in Table-5. The Table-5 depicts that, 125 (95.42%) of research scholars publish because it is a part of PhD their Work, followed by 122 (93.12%) of research scholars published to get the

appointment, about 113 (86.26%) publish to get recognition, 93 (70.99%) publish to become popular in the subject, and 65 (49.62%) of research scholars publish to get research fellowships.

Table 5: Reasons for Publishing.

Reasons	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
To get the appointment	71 (92.21)	51 (94.44)	122 (93.12)
To get research fellowships	37 (48.05)	28 (51.85)	65 (49.62)
To get recognition	68 (88.31)	45 (83.33)	113 (86.26)
To become popular in the subject	56 (72.73)	37 (68.52)	93 (70.99)
As part of PhD Work	73 (94.81)	52 (96.30)	125 (95.42)

Multiple Choice Question

The Table-5 also depicts that, 73 (94.81%) of research scholar publish to get the appointment at UAS, Bangalore and 52 (96.30%) of research scholar publish because it is a part of their PhD work.

4.6 Familiarity and Awareness of Plagiarism Detection Software

The familiarity and awareness of plagiarism detection software has been shown in Table-6. The Table-6 depicts that 123 (93.89%) of research scholars opine as yes towards familiarity and awareness of plagiarism detection software and 08 (06.11%) of research scholars opine as no towards familiarity and awareness of plagiarism detection software.

The Table-6 also depicts use of plagiarism detection software. About108 (87.80%) of research scholars use 'Turnitin', followed by 79 (64.23%)of research scholars use 'DrillBit', 57 (46.34%) of research scholars use 'iThenticate', 48 (39.02%) of research scholars use 'Urkund', 30 (24.39) of research scholars use 'Dupli Checker', 28 (22.76%) of research scholars use 'Viper', 22 (17.89%) of research scholars use 'Plagetracker', 21 (17.07%) of research scholars use 'Plagscan', 14 (11.38%) of research scholars use 'Unicheck' and only 04 (03.25%) of research scholars use other software like See Sources, Plagium, Paper Rater etc.

Table 6: Familiarity and Awareness of Plagiarism Detection Software

Options Department	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
Familiarity of Plagiarism Detection Software			
Yes	74 (96.10)	49 (90.70)	123 (93.89)
No	03 (03.90)	05 (09.26)	08 (06.11)
Chi- Square= 65.46, df is 1, P=0.0001, Significant at p < .05.			
Use of Plagiarism Detection Software			
Urkund	27 (36.49)	21 (42.86)	48 (39.02)
Viper	13 (17.57)	15 (30.61)	28 (22.76)
Turnitin	62 (83.78)	46 (93.88)	108 (87.80)
iThenticate	39 (52.70)	18 (36.73)	57 (46.34)
Plagetracker	17 (22.97)	05 (10.20)	22 (17.89
DupliChecker	21 (28.38)	09 (18.37)	30 (24.39)
DrillBit	65 (87.84)	14 (28.57)	79 (64.23)
Plagscan	18 (24.32)	03 (06.12)	21 (17.07)
Unicheck	09 (12.16)	05 (10.20)	14 (11.38)
Others like SeeSources, Plagium, PaperRater	03 (04.05)	01 (02.04)	04 (03.25)

Chi- Square=228.39, df is 9, P=0.0001, Significant at p < .05.
Multiple Choice Question

The Table-6 also depicts that, 65 (87.84%) of research scholar from UAS, Bangalore use 'DrillBit' and 46 (93.88%) of research scholar from UAS, Dharwad use 'Turnitin' for detection of plagiarism.

4.7 Purpose of Use of Plagiarism Software

The purpose of use of plagiarism softwarehas been shown in Table-7. The Table-7 depicts that123 (93.89%)of research scholars use plagiarism software to reduce the percentage of similar content, followed by 108 (82.44%)of research scholars use because it is mandatory to get the article/ thesis checked before its submission, about 101 (77.10%) to overcome plagiarism, 100 (76.34%) to improve the quality of research papers, 90 (82.44%) to know the original source and authors, and 70 (53.44%) of research scholars use plagiarism software to identify new areas of research.

Table 7: Purpose of Use of Plagiarism Software

Purpose Department	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
To reduce the percentage of similar content	72 (93.51)	51 (94.44)	123 (93.89)
To overcome plagiarism	66 (85.71)	35 (64.81)	101 (77.10)
To know the original source and authors	53 (68.83)	37 (68.52)	90 (82.44)
To improve the quality of research papers	58 (75.32)	42 (77.78)	100 (76.34)
Its mandatory to get the article/ thesis checked before its submission	61 (79.22)	47 (87.04)	108 (82.44)
To identify new areas of research	39 (50.65)	31 (57.41)	70 (53.44)

Multiple Choice Question

The Table-7 also depicts that 72 (93.51%) of research scholars of UAS, Bangalore and 51 (94.44%) of research scholars from UAS, Dharwad use plagiarism software to reduce the percentage of similar content.

4.8 Awareness and Types of Repercussion of Plagiarism.

The awareness and types of repercussion of plagiarism has been shown in Table-8. The Table -8 depicts that 112 (85.50%) of research scholar opine as yes and 19 (14.50%) of research scholars opine as no towards awareness of plagiarism.About 98 (87.50%) of research scholars opine plagiarism damages reputation of the authors, followed by 87 (77.68%) of research scholars opine as it damages the brand name of institution, 62 (55.35%) of research scholars opine as waste of time and resources when involved in enquiries and 49 (43.75%) of research scholars opine budget allocation gets reduced. The Table-8 also depicts that that 56 (86.15%)of research scholars from UAS, Bangalore and 42 (89.36%) of research scholars from UAS, Dharwadopine plagiarism damages reputation of the authors.

Table 8: Awareness and Types of Repercussion of Plagiarism.

Options Department	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
Awareness of Repercussion of Plagiarism.			
Yes	65 (84.42)	47 (87.04)	112 (85.50)
No	12 (15.58)	07 (12.96)	19 (14.50)
Chi-Square=66.02, df is 1, P=0.0001, Significant at p < .05.			
Types of Repercussion of Plagiarism.			
Damaging reputation of the authors	56 (86.15)	42 (89.36)	98 (87.50)
Damaging the brand name of institution	51 (78.46)	36 (76.70)	87 (77.68)
Budget allocation gets reduced	28 (43.08)	21 (44.68)	49 (43.75)
Waste of time and resources when involved in enquiries	36 (55.38)	26 (55.32)	62 (55.35)

Chi-Square=18.51, df is 3, P=0.0003, Significant at p < .05.
Multiple Choice Question

4.9 Factors of Awareness about Plagiarism

The factors of awareness about plagiarism has shown in the Table-9. The Table- 9 depicts that 114 (87.02%)of research scholar became awareness about plagiarism by library staffs demonstration about plagiarism, followed 94 (71.76%)of research scholar became awareness about plagiarism through Internet, 93 (70.99%) of research scholars became aware through research supervisor, 84 (64.12%)of research scholar through friends/colleagues, 72 (54.96%)of research scholar through university administrative authorities and 38 (29.01%)of research scholar became awareness about plagiarism through UGC Ph.D. guidelines/ notifications.

Table 9: Factors of Awareness about Plagiarism

Activities	UAS, B (N=77)	UAS, D (N=54)	Total (N=131)
Through Internet	51 (66.23)	43 (79.63)	94 (71.76)
Library Staff Demonstration about Plagiarism	62 (80.52)	52 (96.30)	114 (87.02)
Through Research Supervisor	48 (62.34)	45 (83.33)	93 (70.99)
Through Friends/Colleagues	43 (55.84)	41 (75.93)	84 (64.12)
Through University Administrative Authorities	33 (42.86)	39 (72.22)	72 (54.96)
Through UGC Ph.D. Guidelines/ Notifications	21 (27.27)	17 (31.48)	38 (29.01)

Multiple Choice Question

The Table-9 also depicts that 62 (80.52%) of research scholar from UAS, Bangalore and 52 (96.30%) of research scholars became aware about plagiarism by library staffs demonstration about plagiarism.

4.10 Activities Leading to Plagiarism.

The activities leading to plagiarism has shown in the Table-10. The Table -10 depicts that 115 (87.79%)of research scholar opine activity of using another person's exact words without including quotation marks and citation leads to plagiarism, followed by 104 (79.39%)of research scholar opine using another person's words, but changing some of them or rearranging them with citation leads to plagiarism, 79 (60.31%)of research scholar opine summarizing or paraphrasing another person's words without citation leads to plagiarism, 45 (34.35%)of research scholar opine citing the source inaccurately leads to plagiarism and 33 (25.19%) of research scholar opine passing off as one's own pre-written papers from the internet or others sources.

Table 10: Activities Leading to Plagiarism.

Activities	UAS,B (N=77)	UAS,D (N=54)	Total (N=131)
Using another person's exact words without including quotation marks and citation	68 (88.31)	47 (87.04)	115 (87.79)
Using another person's words, but changing some of them or rearranging them with citation	53 (68.83)	51 (94.44)	104 (79.39)
Summarizing or paraphrasing another person's words without Citation	47 (61.04)	32 (59.26)	79 (60.31)
Citing the source inaccurately	21 (27.27)	24 (44.44)	45 (34.35)
Passing off as one's own pre-written papers from the internet or others sources	19 (24.68)	14 (25.93)	33 (25.19)

Multiple Choice Question

The Table-10 also depicts that 68 (88.31%) of research scholar of UAS, Bangalore opine activity of using another person's exact words without including quotation marks and citation leads to plagiarism and 51 (94.44%)of research scholar of UAS, Dharwad opine using another person's words, but changing some of them or rearranging them with citation leads to plagiarism.

5. Suggestions

Based on the above results the following suggestions are made for further improvement in awareness and utilization anti-plagiarism software for quality research

- The universities should organise/seminar/workshopon issues related to reference manager, copyright and plagiarism at regular interval of time for faculty and research scholars.
- The library staff should teach how to use commercial and open source anti-plagiarism software effectively.
- The universities must introduce a compulsory paper of IntellectualPropertyRightsintheM.Sc./Ph.D. programme.
- The research scholars should to trained on various citation and referencing standards, So that errors related to citation and reference can be avoided.

6. Conclusion

The research is systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions. It is dishonest to copy another scholar's work without citations and proper acknowledgement. Due to information explosion over Internet, large amount of information is made available via internet. Copying the content of other authors has become very common. Therefore higher educational institutions and publishers use anti plagiarism software to solve the existing problem. After verification if similar content is found, the researchers are asked to change the content by using citations and quotations. However certain percentage of similar content is allowed in all the disciplines, but the percentage from one institution to other varies. It is clear from the study that most of the research scholars of UAS, Bangalore and UAS, Dharwad are aware of plagiarism.

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