Self-Assessment of the Use of Plagiarism Avoiding Techniques to Create Ethical Scholarship Among Research Students

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The use of plagiarism avoiding techniques can be helpful to maintain academic integrity, a better learning environment and intellectual honesty. This explored the use of plagiarism avoiding techniques for creating ethical scholarship among research students. It also measured the association between the frequency of using plagiarism avoiding techniques and the satisfaction about knowledge of plagiarism. Data were collected from seven universities through an online self-structured questionnaire. Ordinal logistic regression analysis was used to explore the variance. The association between the frequency of using plagiarism avoiding techniques and satisfaction about knowledge of plagiarism was indicated. Differences were also found on the basis of gender, discipline, level and stage of study.

*Keywords:* plagiarism, ethical scholarship, plagiarism avoiding techniques, research skills, knowledge of plagiarism, research skills, student learning

**Introduction**

Understanding the reasons of student’s plagiarism is pivotal to know how to avoid plagiarism (Goosney & Duda, 2009). In scholarly writing many factors lead to plagiarism such as impropriate paraphrasing (McLemee, 2004; Share, 2006), quoting materials without quotation indicia (Standler, 2012), improper usage of sources (Braumoeller & Gaines, 2001), and using writings of others in an unacknowledged way (Schwarz, 1992; Race, 2001). Furthermore, lack of knowledge about proper citation methods (Roig, 1997; Landau, Druen & Arcuri, 2002; McLemee, 2004; Sutherland-Smith, 2005; Chen & Van-Ullen, 2011), ambiguity to cite source material (Braumoeller & Gaines, 2001), and assuming web knowledge as public domain and, therefore, ignoring proper acknowledgement (Gresham, 2002; Kaltenbaugh, 2005).

Students plagiarise when they are not familiar with proper ways of quoting, paraphrasing, citing and referencing and/or when they are unclear
about the meaning of common knowledge and the expression in their own words (Parks, 2003).

Plagiarism can be avoided by raising awareness about plagiarism and by educating with plagiarism avoiding techniques among teachers and students (Harris, 2015; Liddell, 2003; Landau et al. 2002). Sarkodie-Mensah (2010) has advocated that students should be familiarized at early stage about the importance of academic integrity and they should be provided awareness about the legal consequences of the plagiarized work. Adoption of strict policies by institutions and the creation of an environment of awareness about sanctions against intentional plagiarism can be helpful to avoid plagiarism (Babalola; 2012, Harris, 2015, Samuels & Bast, 2006). Hence, on the basis of the above-mentioned literature, it is indicated that plagiarism can be avoided by understanding the reasons of plagiarism among students, by raising awareness about plagiarism and by equipping students with skills to use plagiarism avoiding techniques.

Academic integrity can be maintained through the usage of plagiarism avoiding techniques, such as summarising and paraphrasing properly (Babalola, 2012; Zafron, 2012; Bronshteyn & Baladad, 2006; Guinnee & Eagleton, 2006; Share, 2006; Shirley, 2004; Landau et al. 2002), properly citing and referencing the borrowed material (Babalola, 2012; Harris, 2015; Zafron, 2012, Samuels & Bast, 2006; Burkill & Abbey, 2007; Silvester, 2004) improving written skills (Samuels & Bast, 2006) and using direct quotes (Bronshteyn & Baladad, 2006; Silvester, 2004).

Plagiarism avoiding techniques are methods used by students, researchers and scholars during their research to generate new and innovative information to create unique, original and ethical scholarship. Sarkodie-Mensah (2010) has advocated that plagiarism can be avoided through making ‘students conversant with the issues of plagiarism such as cheating, colluding, illegal collaboration, and academic integrity.’ He emphasized that students should have familiarity with the importance of academic integrity and the legal consequences of the plagiarized work. He further reminded that acknowledging sources would promote ethical scholarship and it would create readership for their works.

Plagiarism avoiding techniques can be divided into three broad categories. The first category involves the development of writing, learning and analysing skills to produce innovative research ideas. The second category of plagiarism avoiding techniques includes the learning of citing and referencing of other’s work according to standard styles, by giving credit to authors whose work has been summarized or paraphrased, and proper resource acknowledgement used in the process of research. The third category encompassed the techniques of making proper and logical record of both one’s own ideas and the ideas of others distinctly and separately.
This record should be maintained properly to avoid any misinterpretation or misrepresentation of one’s own ideas and those of others.

This article examines the relationship between the use of plagiarism avoiding techniques and the satisfaction of knowledge about plagiarism. It explores the differences in the use of plagiarism avoiding techniques on the basis of gender, level of study (PhD & MPhil) and stage of the study (course work and thesis work) among research students of social sciences. Furthermore, it explains the difference in the use of plagiarism avoiding techniques on the basis of several disciplines such as sociology, psychology, education and library science.

The current study contributes to create an environment of awareness about plagiarism avoiding techniques that would ultimately help faculty members, instructors, librarians, academic researchers and research students to understand plagiarism and to create ethical scholarship. Current study would promote the environment of academic integrity rather than the culture of deterrence among students as suggested by Parks (2004) and Twomey, White, and Sagendorf (2009). Surprisingly, limited research has been conducted in the field of plagiarism avoiding techniques with pretext to Pakistani society so the current study would fill this gap. It would play a pivotal role to promote intellectual honesty among scholars and research students. This article would promote the policy of normative feedback in scholarly writing as it discusses plagiarism avoiding techniques.

**Literature Review**

Different studies at international level have investigated the avoiding techniques that should be used by students and researchers to create innovative and ethical research. Babalola (2012) conducted a study to examine the awareness, incidences and perceived factors of plagiarism among students at undergraduate level. After analysing the data the study recommended some plagiarism avoiding techniques that need to be taught...
to students. These techniques include summarization and paraphrasing properly, citing and referencing the material borrowed, and recommended the adoption of strict policies and sanctions against intentional plagiarism.

Harris (2015) outlined several strategies to combat plagiarism including understanding plagiarism, educating students about plagiarism and discussing the benefits of citing sources. He further suggested that making penalties clear and raising awareness among faculty would be helpful in restricting plagiarism. Zafron (2012) discussed many plagiarism avoiding techniques in order to create and implement a plagiarism seminar. He suggested that proper citation or using ideas of others with attribution, proper in-text citations, organizational and note-taking skills can be useful as plagiarism avoidance. He revealed that source quotation and paraphrasing were helpful for students to avoid plagiarism. In their research on avoiding plagiarism, Burkill and Abbey (2007) found that faculty members should not tolerate academic dishonesty. They furthermore suggest taking notes from books or articles, copying online sources and including lists of references and bibliography.

Samuels and Bast (2006) explored strategies to avoid plagiarism in their research. They found that improving written communication skills, acknowledging the source by providing citations and warning students of the consequences can be helpful in avoiding plagiarism. Bronshteyn and Baladad (2006) have advised students to cite correctly by paraphrasing and using direct quotes in order to make their research original. Guinnee and Eagleton (2006) consider note taking and paraphrasing very important for the generation of new ideas.

Shirley (2004) suggested students to paraphrase from a source. He proposed that students should extract the main ideas and then make their own paragraph. Students should also make paragraphs of their own material for attaining expertise in paraphrasing. Silvester (2004) proposed that students must be taught about the conventions of quotes, citations and bibliographies.

While defining a workable and useful definition regarding plagiarism for academic librarians in the digital age, Liddell (2003) also proposed different ways for teachers to help students to avoid plagiarism by producing innovative research. He mentioned that teachers must understand what plagiarism is and then give their own definition to students; teachers should explain students how to cite and reference the studied material and inform them about citation and reference lists; teachers should inform students that plagiarism may be detected easily and give them knowledge about plagiarism detection tools; warning should be given to students about the implications of plagiarism and should also be familiarized with different articles, links and hand-outs about plagiarism. Finally, they should be advised
to study the literature already written on their topics of interest, analyse it and suggest their improvements by disagreeing with the author.

Landau, et al. (2002), in their research of ‘methods for helping students avoid plagiarism,’ found that giving examples or feedback on paraphrasing attempts can have a positive effect on students’ knowledge of plagiarism and can, ultimately, reduce the chances of plagiarism.

**Methodology**

Quantitative research design was adopted for the current study. Data was collected through a structured questionnaire from 108 research students of social sciences. The questionnaire was distributed in three parts: the first part contained demographic details such as gender, level of study, stage of study, university and subject. The second portion included questions regarding the frequency of using plagiarism avoiding techniques. The Likert scale was used with response categories ranging from always – 5, usually – 4, occasionally – 3, rarely – 2, to never – 1. The value of Cronbach alpha was 0.79 for the listed sixteen items of plagiarism avoiding techniques. It suggests that the instrument was reliable enough to determine the frequency of using plagiarism avoiding techniques. The third part of the questionnaire collected responses regarding the satisfaction of knowledge about plagiarism and response categories ranging from strongly agree – 5, agree – 4, do not know – 3, disagree – 2, and strongly disagree – 1. The value of Cronbach alpha (0.896) suggested that the instrument was reliable enough to determine the level of satisfaction of knowledge about plagiarism.

Data was collected from 108 (53 male and 55 female) research students of social sciences. Research students had experience in research work such as writing thesis or research articles during their academic careers. Therefore, researchers collected data from MPhil and PhD students because they had experienced research work at least once in their academic careers. Data was collected from research students of social sciences from different universities of Pakistan. Four subjects, including sociology, education, psychology and library and information sciences, were selected from social sciences through simple random sampling. The subject of the study was research students of social sciences and, in order to reach this population, an online questionnaire was shared on Yahoo groups and social networking sites (SNSs). For data collection, an online questionnaire was distributed in the All Pakistan sociological network (APSN), as well as on the forum of social sciences (FOSS) and the Pakistani library and automation group (PLAGPK). Data analysis was completed by using Statistical Package for Social Sciences (SPSS). Ordinal logistic regression analysis was used to find the variance between the independent variable (plagiarism avoiding techniques) and the dependant variables (gender, level
Table 1  Descriptive Statistics of the Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameters</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagiarism avoiding techniques</td>
<td>Low</td>
<td>18</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>45</td>
<td>41.7%</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>45</td>
<td>41.7%</td>
</tr>
<tr>
<td>Level of studies</td>
<td>MPhil</td>
<td>94</td>
<td>87.0%</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>14</td>
<td>13.0%</td>
</tr>
<tr>
<td>Areas of specialization of the respondents</td>
<td>Sociology</td>
<td>45</td>
<td>41.7%</td>
</tr>
<tr>
<td></td>
<td>Psychology</td>
<td>21</td>
<td>19.4%</td>
</tr>
<tr>
<td></td>
<td>Library Science</td>
<td>32</td>
<td>29.6%</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>10</td>
<td>9.3%</td>
</tr>
<tr>
<td>Stage of studies</td>
<td>Course work</td>
<td>41</td>
<td>38.0%</td>
</tr>
<tr>
<td></td>
<td>Thesis work</td>
<td>67</td>
<td>62.0%</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>53</td>
<td>49.1%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>55</td>
<td>50.9%</td>
</tr>
<tr>
<td>Level of satisfaction</td>
<td>Low</td>
<td>1</td>
<td>0.9%</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>57</td>
<td>52.8%</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>50</td>
<td>46.3%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>108</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Notes  Column headings are as follows: (1) number, (2) percentage.

of studies, areas of specialization, stage of studies and level of satisfaction). Linear regression analysis was used to find the association between the use of plagiarism avoiding techniques and the satisfaction of knowledge about plagiarism.

Results and Discussion

In plagiarism avoiding techniques, 41.7 percent of the respondents had high level, 41.7 percent had medium level while 16.7 percent of the respondents had low level of use of plagiarism avoiding techniques. It indicated that the majority of the respondents had a medium level of plagiarism avoiding techniques. Regarding the level of studies of the respondents, 87 percent were enrolled in MPhil, while 13 percent were doing PhD from relevant universities. Regarding the areas of specialization of the respondents, 41.7 percent were from sociology, 19.4 percent were from psychology, 29.6 percent were from library sciences, while 9.3 percent were from education. In stage of studies, 38 percent of the respondents were studying course work, while 62 percent were doing research work. Out of 108 respondents, 49.1 percent were male, while 50.9 percent were female. As of the level of consultation, 25.9 percent had low level of consultation, 50 percent had medium level of consultation, while 24.1 percent had high level of consultation. In level of satisfaction, 0.9 percent had low level, 52.8 percent
Table 2  Descriptive Statistics of Respondents’ Frequency of Using Plagiarism Avoiding Techniques

<table>
<thead>
<tr>
<th>Response categories</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listing of writers and their viewpoints separately discovered during research</td>
<td>4.1574</td>
<td>0.96830</td>
</tr>
<tr>
<td>Identify the sources of all exact wording of ideas, arguments and facts that borrowed</td>
<td>4.0093</td>
<td>1.00926</td>
</tr>
<tr>
<td>Taking notes (organized note taking system) while studying relevant research material</td>
<td>4.1296</td>
<td>0.88700</td>
</tr>
<tr>
<td>Keeping record of photocopies of sources or save the copies in some folders in personal computer/laptop</td>
<td>4.5093</td>
<td>0.89124</td>
</tr>
<tr>
<td>Keeping separate own ideas and summaries from other’s ideas</td>
<td>4.1111</td>
<td>0.99844</td>
</tr>
<tr>
<td>Analysis and evaluation of what is read</td>
<td>4.2778</td>
<td>0.96512</td>
</tr>
<tr>
<td>Practicing of writing ideas in my own words</td>
<td>4.2870</td>
<td>0.89705</td>
</tr>
<tr>
<td>Using quotes for the exact words copied</td>
<td>4.0648</td>
<td>1.16228</td>
</tr>
<tr>
<td>Providing reference for the paraphrased and adapted material</td>
<td>4.6296</td>
<td>0.69164</td>
</tr>
<tr>
<td>Using documentation styles/rules of referencing consistently</td>
<td>4.4815</td>
<td>0.74233</td>
</tr>
<tr>
<td>(Harvard, APA, MLA etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledge collaborations</td>
<td>4.2778</td>
<td>0.85197</td>
</tr>
<tr>
<td>Avoid self-plagiarism (submitting data by misrepresenting already submitted data)</td>
<td>4.2963</td>
<td>1.05245</td>
</tr>
<tr>
<td>Avoid quoting indirect sources if necessary then quote both original and secondary sources</td>
<td>4.3178</td>
<td>0.75982</td>
</tr>
<tr>
<td>Cite derived graphs, tables, statistical information, illustrations, and photographs properly</td>
<td>3.8426</td>
<td>1.19314</td>
</tr>
<tr>
<td>Using common knowledge, universal facts without citing it</td>
<td>3.2897</td>
<td>1.43078</td>
</tr>
<tr>
<td>Making sure that all cited items have got place in the bibliography or work cited page</td>
<td>4.4259</td>
<td>0.91920</td>
</tr>
</tbody>
</table>

Notes  Column headings are as follows: (1) mean, (2) standard deviation. 5 – always, 4 – usually, 3 – occasionally, 2 – rarely, 1 – never.

had medium level and 46.3 percent had high level of satisfaction. It suggested that the majority of students had a medium level of satisfaction about knowledge of plagiarism.

The descriptive statistics of the respondents showed that the majority of respondents usually used plagiarism avoiding techniques. It contradicted with the findings of Sowden (2005) and Christensen-Hughes and McCabe (2006) in the view that students from non-Western cultures might not be as familiar with issues like plagiarism, as using plagiarism avoiding techniques proved the familiarity of students with plagiarism-related issues. Keeping record of photocopies of sources or save the copies in some folders in personal computer/laptop, providing reference for the paraphrased and adapted material and using sources correctly and appropriately were the techniques always used to avoid plagiarism by research students. They
usually used plagiarism avoiding techniques to be sure that citations were included in the bibliography, and avoided quoting direct sources or rewriting the sources read. Respondents occasionally used common knowledge and universal facts without citation. Wilhoit (1994) suggested in his work for helping students to avoid plagiarism that copying a paper from a source text without proper acknowledgements, not using quotation marks for copied texts or paraphrasing material from a source text without appropriate documentation were acts of plagiarism. But this study revealed that respondents were using all of the above mentioned as techniques to avoid plagiarism. Findings of this study supported the findings of Williamson, McGregor and Archibald (2009) on the point of note-taking, paraphrasing, generating new ideas, acknowledging quotations and citations. Using the common knowledge, universal facts without citations had a lowest value of mean (3.2897) among all the categories of using plagiarism avoiding techniques. According to Duff, Rogers and Haris (2011), using common knowledge, universal facts without citations was a consequence of the perception that the author’s knowledge had become commonplace and, therefore, belonged to the realm of collective ownership. It was revealed that the majority of the respondents usually used plagiarism avoiding techniques.
Logistic regression analysis was used to explore the association between the independent variables (gender, level of study, stage of the study, subject and level of satisfaction about knowledge of plagiarism) and the dependent variable (plagiarism avoiding techniques). The findings show that students are highly using plagiarism avoiding techniques, as the odds for using plagiarism avoiding techniques at lowest level and medium level decreased by 0.06 and 0.64 times, respectively.

The findings demonstrate that male students are 2.75 times more likely to use plagiarism avoiding techniques at highest level as compared to female students. The use of plagiarism avoiding techniques was two times higher in male as compared to female research students. Hence, it is revealed that the use of plagiarism avoiding techniques was higher among male students in comparison to female students. Regarding the level of studies, the findings reveal that the probability of using plagiarism avoiding techniques decrease as the level of education decreases, as the odds of using plagiarism avoiding techniques for MPhil students decreased to 0.895 times as compared to PhD students. Students at the level of PhD studies were using plagiarism avoiding techniques 11 percent more compared to students at the level of MPhil studies. As suggested by the findings, younger and academically less able students used less plagiarism avoiding techniques. It supported the assumption that younger students and less academically able students were found to plagiarise more (McCabe & Trevino, 1997). Similarly, less matured and less experienced students used more means of plagiarism than that of others (Szabo & Underwood, 2004). Presumably, PhD students have more knowledge and experience that helped to use plagiarism avoiding techniques. Another reason of this difference was a major exposure to research work that enabled PhD students to use plagiarism avoiding techniques more than MPhil students. Hence, findings revealed that the use of plagiarism avoiding techniques was higher in students of PhD studies as compared to students of MPhil studies. As PhD students are elder in age and use plagiarism avoiding techniques more as compared to MPhil, it therefore approved the previous assumption of Ercegovac and Richardson (2004) that the use of plagiarism declined with age.

As of the stage of studies, the findings reveal that the probability of using plagiarism avoiding techniques decrease as the stage of studies decrease, as the odds of using plagiarism avoiding techniques for course work students decrease by 0.283 times as compared to research work students. Hence, the stage of studies has an association with the use of plagiarism avoiding techniques. Research students at the stage of thesis work were using more plagiarism avoiding techniques as compared to students at the stage of course work. Students at the stage of thesis work were using pla-
Consequently, the value of odd ratio in the model for subject of sociology (4.282) suggested that the research students of the above mentioned discipline were more likely to use the plagiarism avoiding techniques in comparison to psychology (3.103), library science (2.811) and education (1 – reference category). The rate of using plagiarism avoiding techniques was higher among research students of sociology as compared to education, library sciences and psychology, while the use of plagiarism avoiding techniques was the lowest in students of education as compared to students of sociology, library sciences and psychology.

The findings show that students have a high level of satisfaction regarding the knowledge of plagiarism with a high use of plagiarism avoiding techniques, as the odds for using plagiarism avoiding techniques at the lowest and medium levels decreased by 0.346 and 0.487 times, respectively. The relationship between both variables was also confirmed by linear regression analysis. The results showed $R^2 = 0.275$ and thus demonstrated that approximately 27.5% of the variance in satisfaction regarding knowledge of plagiarism listed under the frequency of plagiarism avoiding technique. The overall model proved significant in that $R = 0.524, F = 39.42, p < 0.001$ and the relationship between the two variables was positive leading to the acceptance of hypothesis that stated that there will be a positive relationship between frequency of plagiarism avoiding techniques and the satisfaction concerning knowledge of plagiarism. Value of R suggested that the use of plagiarism avoiding techniques explained 52% of satisfaction about knowledge of plagiarism.

Conclusions

The study concluded that the majority of research students were using plagiarism avoiding techniques. The use of plagiarism avoiding techniques was higher among research students of sociology as compared to students of education, library sciences and psychology. Research students at the stage of thesis work were using more plagiarism avoiding techniques as compared to students at the stage of course work. Students enrolled in PhD were using plagiarism avoiding techniques more as compared to the students enrolled in MPhil studies. The use of plagiarism avoiding techniques was higher among male students as compared to female research students, while the level of satisfaction was medium and higher among students who use plagiarism avoiding techniques.

In order to create an ethical environment and academic integrity, the academic institutions need to adopt orientative workshops for research students to enable them to practice avoiding plagiarism techniques. The exist-
ing programs of submitting assignments for different subjects should include sessions on plagiarism avoiding techniques and encourage students to inculcate academic integrity through abiding by set of rules and regulations. According to Liddell (2003), one must ‘avoid plagiarism, one must internalize, understand and reorganize material and make it one’s own.’ Devlin (2006) suggested that raising awareness among students, educating students through clear definition and minimizing plagiarism through a selection of strategies can be helpful in avoiding plagiarism. Koha, Scullyb, and Woodliff (2011) also suggested that plagiarism can be reduced through a combined response by academics through curriculum and course design and a policy response at university level. Wingate (2006) suggested that the learning of such skills is better when these are incorporated in the core subject teaching.

Furthermore, it is suggested that use of Turnitin software should be based on normative feedback rather than using it as tool to deter students who plagiarize (Davis & Carroll, 2009; Emerson, 2008). In particular, universities in Pakistan need to adopt proactive policies rather than reactive ones towards plagiarism.

**Future Research**

Future research can also investigate the differences of plagiarism avoiding techniques among students in public and private universities. The present study has opened up some interesting new questions for further research. In the academic sphere of universities in Pakistan, many researches tried to find out about the awareness of students about plagiarism. The research should be conducted to know the attitude of students towards plagiarism and the practice of avoiding plagiarism techniques. Research should also be conducted to find out the relationship between awareness, attitude and practice of plagiarism. Future research could strive to find out the differences in students and faculty perspective of plagiarisms in Pakistan and its findings would be helpful in order to integrate the loopholes in academic writing, as well as to promote ethical values among research students. Empirical evidence from different cultures and disciplines could also be focal points in future research. Justifications of the cases that were caught in academic plagiarism could also be an interesting point of investigation for future research in Pakistan. Finally, future research could find out the causes of gender differences in the usage of plagiarism avoiding techniques.

**Research Limitations**

The current analysis on the use of plagiarism avoiding techniques only represents research students of social sciences, so its findings cannot be generalized to other disciplines of natural sciences, art and humanities.
only four subjects among social sciences were selected through sampling, its findings cannot be thus generalized to all subjects of social sciences. As it is a self-reported study on the behaviour of research students’ use of plagiarism avoiding techniques, there may be statistical variance on the basis of social desirability bias. The findings of the research highlighted the use of plagiarism avoiding techniques among MPhil and PhD students, its finds do not therefore translate into the trends among masters and graduate students in universities. The present study also cannot be generalized either within the same institutional setting of universities or beyond.

References


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