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Minimizing Cyber-Plagiarism through Turnitin: Faculty's & Students' Perspectives

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Abstract

This is an attempt to investigate and evaluate students' and faculty's experiences and understanding to the strengths and limitations of anti-plagiarism software, specifically, Turnitin and how it could be used to promote academic integrity among engineering students. 50 engineering students and 20 professors were surveyed and interviewed. The paper argues that although Turnitin is widely used these days to tackle and minimize plagiarism practices, however cyber-plagiarism is increasing and the software might be inadequate in fighting such practice. The paper also questions the effectiveness and limitations of the software in relation to current practices. The findings revealed that most of the respondents perceive Turnitin positively; limitations of the software are not many and they believed that the software is effective in detecting and minimizing plagiarism incidents among their students' papers. The study puts forward some recommendations which might help practitioners in minimizing plagiarism practices.

Key Words: Cyber-plagiarism, Turnitin, anti-plagiarism software**,** digital cheating**,** academic integrity

1. Introduction

Plagiarism has become a common phenomenon among students since the emergence of the internet and the influx of information technology round the globe. The internet age has brought a remarkable opportunity for students and teachers to learn, but it also brought challenges to academic integrity and good practices. Literature indicates that there is a relationship between the digital age and the decline of ethical values among students in terms of plagiarism and cheating (Rawul, 2009:179*). 'Widespread to the internet and other electronic media has served as something of a double-edged sword with respect to plagiarism'* (Youmans, 2011:750). The internet allows students to plagiarize with cut-and-paste ease, but also enables instructors to identify plagiarism in an easily manner of the source of the plagiarized materials (Lyon, Barrett, & Malcolm, 2006, cited in Youmans, 2011: 750). However, there are many electronic detection softwares for eliminating the problem in place. A range of software packages have now become available for tracking down and minimizing plagiarism among students. One of the most popular of these packages is Turnitin (Gabriel, 2010 as cited in Stapleton, 2012:126) which is widely used nowadays for combating plagiarism practices. Turnitin was launched by iParadigms, LLC, in 2008 and it claims that as cited in Stapleton (2012) Turnitin is licensed in 126 countries and available in 12 languages and it is widely used round the world. Turnitin compares student papers against a large number of sources including peer-reviewed articles, web pages, textbooks, essay banks, etc. (Youmans, 2011). Turnitin is very fast software and it could process a paper in about 13 seconds. It can assist instructors and examiners by showing them how essays are constructed, whether they are technically plagiarized or not? It can be useful for supervisions and examinations of theses. By understanding students' and teachers' perspectives about the strengths and limitations of the particular software and could provide some possible strategies that would help both students and faculty members in coping and tackling digital cheating in an effective manner. Further it can help institutions to adopt policies that could maintain academic integrity and find good ways to deal with any sort of cyber-plagiarism. This study is primarily interested in investigating students' and faculty's experiences, perceptions and understanding of the efficiency and effectiveness and limitations of anti- plagiarism detection software (Turnitin) and to find some possible solutions for minimizing plagiarism practices among students.

2. Statement of the Problem

The use of technology has enhanced the convenience, flexibility, and efficiency of education; however, it increases academic dishonesty such as plagiarism (Harper, 2006). *"Because of technology, it is simply easy to plagiarize"* (Stowers & Hummel, 2011: 164) .Therefore, the majority of higher institutions in Oman have embedded in their practices and instructional programmes anti-plagiarism detection software to minimize cyber-plagiarism among their students. This research problem is formulated from a practical experience in the field that digital cheating has become prevalent among college students, particularly non-native speakers of English students despite the effort made by institutions to cut down plagiarism rates. According to (Todd, 2010) there are many techniques and packages that teachers could use to detect plagiarism incidents such as research engines (i.e. Google), to find matches on the internet. Second, there are those which find similarities between files on a single computer, these are intended primarily to detect collusion. Finally, there are those, of which Turnitin is the best-known software which provides students and teachers

with tools to defeat plagiarism from any source whether printed or digital one by matching them against its own archives (Todd 2010). However, it would be a great mistake to assume that plagiarism detection software is effective in combating all *'epidemics of internet plagiarism'* (Lee: 361) among students. Therefore, this study is conducted to examine experiences and perspectives of students and teachers towards anti-plagiarism software, specifically, Turnitin by answering some questions given to staff members' and students with regard to plagiarism detection software, specifically, Turnitin, and its efficiency and effectiveness in decreasing plagiarism rate among engineering students in a private college in Oman, as well as its limitations in combating plagiarism incidents among students. The present study strives to address the following core questions: Does the use of Turnitin curb plagiarism practices among students? What are the strengths and limitations of Turnitin according to students' and faculty? How is Turnitin perceived by faculty and engineering students? Is the current software adequate? What are some of the other possible strategies for minimizing cyber-plagiarism among students? The findings of this study are expected to serve as practical tips along with its pedagogical implications in shaping both teachers' and students' understanding of digital cheating and plagiarism and the use of its digital detection packages.

The significance of the present study is due to the fact that it drives its magnitude from the fact that it is the first study of its type in this context and the results would help students and instructors to improve their use of anti-plagiarism technology. Moreover, there was a lack of information about students' and teachers' views about the strengths and limitations of Turnitin in relation to their current practices. Therefore, this study strives to explore both students and instructors' views the software effectiveness and limitations and to find ways to further improve it. It is hoped the findings will be of a great value to students and teachers at this particular college and other institutions across the region. Moreover, it is believed that this study deals with the most fundamental issue in today's digital age which is anti-plagiarism software technology in an engineering context. Further. It tries to provide a review of the literature related to the use anti-plagiarism technology in engineering education in order to determine the strengths and limitations of the software in question and provide some pedagogical implications that could help in minimizing cyber-plagiarism practice among engineering students.

3. Defining Plagiarism

Plagiarism is defined by the Council of Science Editors as *"a form of piracy that involves the use of text or other items (figures, images, tables) without permission or acknowledgement of the source of these materials"*(cited in Cross, 2007:963*).* Plagiarism is a controversial term and it threatens the very heart of academia (McLAFFERTY, 2010). *Plagiarism is a problematic and widely misunderstood concept for students…* (Scanlon, 2007:163). Moreover, faculty is not in universal agreement on what constitutes plagiarism or what faculty response to student plagiarism should be (ibid: 163). Gerding (2012) claims that in countries like China, India and Iran view what constitutes plagiarism is markedly different from our own interpretation and they may consider intellectual ownership as a Western concept only. *"...Because in Eastern cultures, it is an honor and expectation that work will be copied* and *Asian students are taught to memorize texts as a sign of respect for authors. If an author writes an idea particularly well, then it would be disrespectful for a student to alter the original author's words in a paper'* (Stowers & Hummel, 2011:165). Some of them feel that as long as the author is included in their footnotes, they can "cut and paste". Therefore, it is difficult to be precisely defined, because there are arrays of definitions in the literature. Plagiarism can take a form *'Blatant plagiarism'* (Braumoeller & Gaines, 2001) of copying an entire essay or significant portions of the easy have been copied or paraphrased without reference or quotations (Warn, 2006, 195). Plagiarism is taking another person's ideas and using them as one's own (Austin & Brown, 1999, p.21 cited in Warn, 2007:196). *'Casual plagiarism'* content within the paper bear too close a resemblance to passages in the source material to constitute original work, and even though the original source is cited somewhere in the appear, the method of citation used does not make clear that the content in question is not original (Braumoeller & Gaines, 2001). (Loveless, 1994:509 as cited in Naqvi & Aldamen, 2010: 135) views plagiarism as the "cardinal sin in academe" whereas Smith. (2008: 20) refers to it as "intellectual rape". There are many types of plagiarism such as intentional plagiarism where students try to deceive their instructors, or unintentional where might be due to poor referencing, sloppy citations, or language skills. additionally, there is 'patchwork' plagiarism occurs when material is cut and pasted from various sources (Austin & Brown, 1999 cited in Warn, 2006).In addition, self-plagiarism which is known as textual re-use (Lowe, 2003); multiple submission (Fulda 1998,; Hinz 1997, Horowitz, 1997); simultaneous submission & republishing (Hauptman 1997); redundant publication (Schein & Paladugu, 2001); Broome, duplicate publication); fragmented publication (Gwilym et al.2004); text recycling (Roig, 2006); dual or duplicate publication (Errami et al. 2000, 2008); Self-copying (Scanlon, 2007) & republication, multiple publication, repetitive publication, overlapping data/publication. Salami or divided publication, covert duplication & duplicate publication (Langdon-Neuner 2008) cited in (Bretag & Mahmud; 2009:198). It is defined as recycling your previously published work without appropriate acknowledgement of the original work, Bretag & Mahmud, 2009:194). It is also defined as the publication of the same (or very similar) article in multiple journals or the author reuses substantial parts of their published work without providing the appropriate references (Bouville, 2008:313). Finally, *"plagiarism of secondary sources"* occurs when a person gives references to original sources, and perhaps quotes them, but never looks them up, having obtained both from a secondary source-which is not cited (ibid).In addition, contract cheating could be one of the forms of plagiarism and defined *"as a form of academic dishonesty, where students contract out their coursework to writers or workers, usually found via the internet, in order to submit the purchased assignments as their own work'* (Walker &Townley, 2012:27). Most these forms of plagiarism could be detected by anti-plagiarism software**s.**

3.1 An Overview on Anti-plagiarism Detection Software

Digital plagiarism is a growing problem for educators in this information era (Butakov & Scherbinin, 2009:781). However, there are many anti-plagiarism softwares and tools available to be used and each of which has its strengths and drawbacks such as Turnitin, Safe assign, Doccop.com. Digital books Web browsers, Plagiarism Detect.com, Viper, EduTie, PlagiServe, Moss, but CopyCatch Gold, iThenticate, and WCopyfind which are considered as collusion-detectors. Safe assign is free software, but only works with the Blackboard CMS (Todd, 2010). Whereas, Doccop.com, is free but works only with limited paragraphs and it is not linked to CMS and small fee for an entire paper may be required. As for, Digital books and Web browsers are usually free and they do not compare submissions to other students' papers and do not include all professional databases or the internet (Lee, 2011:148). *"Use of online technologies to avoid plagiarism from online resources is the best option recommended by (*Snow, 2006*,* cited in Ramzan et al. 2012:73). However, *"the infusion of technology in higher education has done little to minimize the problem of academic dishonesty. More than likely, technology has provided the convergence of motivation and opportunity, increasing the problem"* (Kennedy et al. 2000:309 cited in Smith et al, 2005:4).

3.2 Effectiveness of Turnitin

Turnitin is an institutional plagiarism *"detection service and is becoming the defacto tool in plagiarism identification, and recognized as a tried and trusted system in use round the world, especially with its links to Virtual Learning Environment such as Blackboard"* (Jones & Moore, 2010:425). It is considered one of the most popular and well-known anti-plagiarism software which has been adopted at a half-a –million faculty member and in more than one hundred ten countries worldwide (Lee, 2011, Neil & Shanmuganthan, 2004). *"Turnitin is the global leader in electronic plagiarism detection, and is tried and trusted systems over 80% of UK universities have adopted it*" (Heather, 2010:648). It was designed by John Barrie, a biophysicist in 2008 at University of California (UC) Berkeley to identify the cheating within his classes (Stowers & Hummel, 2011). It examines matches over 12 million pages of indexed web content, 100 million students' papers , and over 80,000 professional, academic and practitioner journals and publications. It has reported successfully reduce online plagiarism up to 35%. It has adopted e-Blackboard as an instructional tool, and it is integrated with the learning system programmes (Lee, 2011:305). It dramatically increases the ease by which verbatim copying can be discovered and detected by the tutors (Park, 2003 as cited in Warn. 2006:196). Moreover, Turnitin originality report may help all students learn about ethical standards regarding dishonesty (Zeman et al, 2011). Moreover, it could provide proof if it comes to disciplining a student (Donald, 2006).Rolfe conducted a study in (2007) on students who used Turnitin and he found that the software formatively improved their abilities to rewrite their work; and the showed a reduction in the level of plagiarism that was because of poor paraphrasing Rolfe (2011:704). Turnitin could be integrated into the most popular course management systems (CMS), including Blackboard, WebCT, ANGEL, and Moodle (Butakov & Scherbinin, 2009:781).

3*.3 Limitations of Turnitin*

> …*"Despite often being alluded to as a 'plagiarism detection' tool, Turnitin does not actually identify plagiarism per se. It merely matches material present in a specific document uploaded to the Turnitin website to material present on the Internet. An originality report is provided for each document that indicates the percentage of matching material in the assignment, with links to the location of the Internet source, thus allowing the marker to compare the original with the reproduced material, depending on source accessibility"* (Walker 2010:4)

However, Turnitin is considered as one of the well-known means of detecting student plagiarism. The use of plagiarism detection software is now widespread in higher education, but caution is needed because instructors and students need to be familiar with the software before mandating its use (Ford & Hughes, 2011). Firstly, the instructor has to create 'a class'. The software ignores a submission by the same author for the same class when cross-checking text. For self-plagiarism detection, the records for each author therefore needed to be entered into two separate classes. However, the high percentage of text-match is not necessarily an indicator of any form of plagiarism. Nevertheless, anti-plagiarism technology is criticized because some of the detected word matches are not instances of plagiarism (Mulcahy & Goodacre, 2004, cited in Warn 2006).*'The software doesn't detect whether the matching word string is contained within quotation marks, or whether a stated reference is the correct one or not"* (Warn, 2006:200).The tutors need to check these aspects and this can be time-consuming. Moreover, the efficient use of anti-plagiarism software demands that a software package line WebCT be used as an electronic platform for receiving and downloading essays. Further, the software designed to detect only fairy exact word string matches and unattributed paraphrase may be detected (ibid: 201).The quantitative output from the report needs to be treated with care and should be analyzed along with the qualitative judgment in order to know whether there was a deliberate attempt to plagiarize or not. In addition to, Turnitin requires all papers must be in digital format in order to be used by the software (Bristol, 2011). Lee (2011) asserts that Turnitin is costly and it does not do well with current in-print books. Further, software maybe considered by students as policing mechanism and these plagiarism checkers could cause faculty to avoid engagement with pedagogical and ethical issues involved and they divert them from the real problem. Using software may destroy trust between students and instructors and introduce mutual distrust and students may feel sensitive to the lack of trust (Williams, 2007, Scanlon, 2007:164). Research on Turnitin (Bishop, 2006, Royce, 2003, cited in Williams, 2007)

shows that Turnitin can produce inaccurate reports that indicate both plagiarism where it doesn't exist and miss plagiarism where it does. In addition, there is a legal questions raised by the automatic inclusion of student paper into the database that have led to lawsuits (Robelen, 2077, cited in Williams, 2007). Turnitin percentage does not reflect whether or not an academic violation has taken place; papers often contain quotations, citations, famous names, reference pages, common phrases, figures of speech or simply coincidences, all of which inflate these percentages which requires human careful and sound judgment (Youmans, 2011:752). Furthermore, (Barret & Malcolm 2006 cited in Bretag & Mahmud 2009) maintains that the software could indicate *possible* plagiarism rather than providing a complete certainty. Therefore, 'manual verification' is needed to determine if text matches represent unethical or legitimate duplication (Errami et al. 2007, 2008 cited in Bretag & Mahmud 2009).Turnitin is criticized of being *"taking millions of previously submitted papers, in each of which copyright resides with the student author, and-without the freely given consent of the author-using them to make money. There appears to be some divergence here from the supposedly ethical stance adopted the plagiarism police"* (Doland, 2006:1).He adds to say Turnitin culture which treats ideas and writings as commodities needs to be challenged by educators and students (ibid).In addition, one of the drawback of plagiarism detection systems cannot determine whether the any of the submitted work has been purchased and been done by contractor or "contract cheating" or "bespoke work"(Cross,2007) where a student pays a contractor to write an assignment or swaps assignment with another student (Rolfe,2011:708) in all these cases the software cannot detect and do not match any document in the corpus (Cross, 2011). Turnitin can be deceived and misdirected to reduce the similarity score by replacing a single letter throughout a document with an alternative, such as all instances of 'a' are replaced by 'a', then the user creates a macro linked to the document such that when the file (containing the replaced characters such as 'a') is opened the macro automatically replaces the altered character to the original form. This would disable the system from detecting the matches (Jones, & Moore, 2010:427). A second approach which is based on character replacement such as the letter 'I' is replaced with the number '1'.The trick here is that the font used throughout the document must be set to Times New Roman, which means that the two characters appear similar. It could mislead the system Turnitin and this leads to a low similarity score (ibid: 427).

4.5 Strategies for Preventing and Minimizing Plagiarism Practices among Students

Nowadays, fighting and preventing plagiarism is not an easy task because of the influx of information and the emergence of the cyber-age which facilitates cheating. There are many strategies and suggestions available in the literature that could cut down plagiarism in general and cyber-plagiarism in particular. Warn (2006:206) suggests that cyber-plagiarism can be controlled if it is embedded within the teaching objectives of the course and become a part of the instruction. Plagiarism should be a part of pedagogy and it should be embedded within instruction (Lee, 2011). Faculty should act as educators, rather than as detectives (Scanlon 2007:161) the focus should not be diverted to detection than instruction. Moreover, he (ibid: 206) adds anti-plagiarism techniques need to be assembled in ways that assist learning outcomes and help make the course material more meaningful for students. Further training on how to use the software and referencing and citations effectively for both faculty members and students also can help in decreasing the cheating practices among students (Lee, 2011 and Briggs, 2003, cited in Warn, 2006). In addition to, student attention is to be shifted from 'going under the radar' towards being more confident and involved in their learning. Teachers do not need to work as plagiarism police but they just need to seek for good academic practice. Instructors should consider avoiding broad, fact-based assignment that encourages students to 'appropriate" pre-existing materials for internet (Ashworth & Bannister, 1997; Whitley & Keith-Spiegel, 2002 cited in (McLAFFERTY & Foust, 2004:189). Moreover, teachers need to avoid assigning term papers in general topics and themes, review multiple drafts of papers, and discuss writing projects with students as their work progresses (Scanlon: 164). Lee (2011) proposes the 3 P's of preventing plagiarism which are highly important for minimizing it (policy –related to plagiarism should be clear, consistent and objective). Defining plagiarism should be consistent, policy regarding the use of the software should be clear, and identifying the acceptable level of the originality report of the paper to clear for all student. Students have different understandings of plagiarism and students should be taught why plagiarism is unethical practice from the early beginning of their courses (East, 2009). A strict tolerance or no-tolerance policy for plagiarism should be in place and should be communicated to all students during their induction weeks. Clearer guidelines are required on how to interpret the originality reports to facilitate students and staff in using such system in self-service manner and how to improve their referencing and citation skills (Rolfe, 2011). Furthermore, students should be encouraged to use electronic detection software as a tool for crafting and redrafting their work (Bretag & Mahmud, 2009). Additionally, they should be made aware that to trial their submissions in Turnitin before sending in their final papers. Finally, identical match is not always the result of plagiarism, but simply the result of Plaintiff's earlier submission. Educators need to put this into consideration when verifying the software report (Todd, 2010).

4. Methods

This study adopts a combination of quantitative and qualitative approaches by employing both questionnaire and interview with students and engineering faculty along with a follow up interview with some of the members of staff in engineering departments. Frequencies and percentages were used to analyze data.

4.1 Participants

This study took place in a private university college in the Sultanate of Oman. The participants of the study comprise 50 students and 20 instructors in a private engineering university college in Oman. The vast majority of the students are Omani and they are coming from similar socio-cultural and linguistic backgrounds. They are studying in different engineering departments such Mechanical, Civil, Electronics, Mechatronics, Electrical, etc. They have been studying

English since their primary schooling and have substantial proficiency in English language because English is the medium of instruction in their ongoing engineering education. The majority of instructors are from India and few from countries like Iraq and Egypt. All of them have been teaching and instructing in Oman for a couple of years and they have using Turnitin software for several years. Moreover, a follow up interview with 5 engineering instructors was conducted to back up the questionnaire data.

4.2 Instruments & Procedures

In order to answer the above mentioned research questions, the currently adopted questionnaire and interview were reviewed critically and analytically against the research questions. For establishing validity of the questionnaire, it was given to instructors for checking the wording and clarity of the instructions and its items. In view of their feedback, some irrelevant questions were taken out and all the wrinkles were iron out. Both teachers' and students' questionnaires contain three parts which are: their perceptions about the current use of Turnitin, their views about the strengths and limitations of the software and how it use could be improved in combating cyber-plagiarism among students. Frequencies and percentages were used to statistical analysis.

5. Analysis of Results & Discussion

5.1 Analysis of Faculty's Questionnaire

Table 1. Faculty's responses & reflections about their current use of Turnitin

No	Statements	Always		Sometimes		Never	
		F	**%**	**F**	**%**	**F**	**%**
1	Have you ever used Turnitin anti-plagiarism detection software?	13	65	6	30	1	5
2	Have your students been trained in how to use Turnitin?	11	55	7	35	2	10
3	Should all student work be submitted to Turnitin to deter plagiarism?	10	50	9	45	1	5

From the results in table 1, it can easily be observed that approximately (65%) of the faculty responded that they 'always' use anti-plagiarism detection software, whereas (30%) of the respondents responded by 'sometimes' and (5%) s of the faculty never used it at all. It is quite evident that the majority of the faculty members used anti-plagiarism software in their practices. Therefore, it could be argued that Turnitin is quite popular among the staff.

Table 2. Faculty's positive views & reflections about Turnitin strengths

No	Statements	Agree		Not Sure		Disagree	
	Strengths	**F**	**%**	**F**	**%**	**F**	**%**
4	Using Turnitin has helped to curb plagiarism among my students.	14	70	3	15	2	10
5	Turnitin is effective tool for combating digital plagiarism.	11	55	5	25	3	15
6	Using Turnitin should be made mandatory in all courses.	7	35	5	25	8	40
7	The use of Turnitin has promoted originality in students' papers.	9	45	7	35	5	25
8	Turnitin has facilitated students' understanding of plagiarism.	13	65	7	35	0	0
9	Using Turnitin could deter cheating among my students'.	21	65	3	15	3	15
10	Using Turnitin has improved students' citation rates skills and academic skills.	9	45	8	40	3	15
11	Using Turnitin has helped students to learn about ethical standards regarding dishonesty.	12	60	7	35	1	5
12	Using Turnitin has helped students to re-write their papers.	17	85	2	10	1	5
13	Implementing Turnitin software is an effective way to educate my students about the boundary of internet plagiarism.	17	85	2	10	1	5

Items 4-13 were designed to examine the faculty members' views about their positive experiences with Turnitin. As for 4, whether they believe that Turnitin has helped them to curb plagiarism practices among their students or not. (70%) believed that it did help them to minimize plagiarism rates among their students, (15%) responded by 'I don't know', and only (10%) 'disagreed'. Concerning item (5) whether they view Turnitin as an effective tool for combating plagiarism practices or not**,** (55%) 'agreed' that is effective tool for fighting plagiarism incidents, while (25%) responded by 'I don't know', and (15%) 'disagreed'. Therefore, it could be argued that the vast majority of the staff (55%) believed that Turnitin is effective tool for combating plagiarism rates among their students. Regarding item (6), the questionnaire revealed that (35%) of the respondents 'agreed' that Turnitin should be made mandatory to all students, whereas, (25%) responded by 'I don't know', and (40%) 'disagreed' with the statement. The analysis of item (7) revealed mixed responses as it showed that (45%) of the respondents 'agreed' that Turnitin has promoted originality in students papers,

and (35) 'were not sure', and (25%) 'disagreed' with the statement. This is supported by Rolfe study in (2007) on students who used Turnitin and he found that the software formatively improved their abilities to rewrite their work; and they showed a reduction in the level of plagiarism that was because of poor paraphrasing Rolfe (2011, 704). Further, Turnitin originality report may help all students learn about ethical standards regarding dishonesty (Zeman et al, 2011). As for item (8), the results showed that (65%) of the faculty believed that Turnitin has helped their students to understand plagiarism in a better way, (35) were 'not sure', and no one 'disagreed' with the statement. Moreover, item (9) indicated that (65%) believed that Turnitin could deter cheating among students, (15%) were 'not sure', and only (15%) 'disagreed' with the statement.

As for item (10) the result revealed that the fact that (45%) of the faculty believed that Turnitin has helped improved students' citation rates and academic skills, while (40%) of the respondents were 'not sure', and (15%) disagreed. Concerning item (11), the result showed that (60%) of the staff members believed that Turnitin has helped their students to learn about ethical standards, whereas (35%) of the respondents were 'not sure', and only (5%) 'disagreed'. This accords with the argument Turnitin originality report may help all students learn about ethical standards regarding dishonesty (Zeman et al, 2011).It could be Turnitin doesn't only help students to avoid plagiarism but it can help them to learn ethical standards and values of good practices. Regarding question (12) whether using Turnitin has helped students to rewrite their papers in a better way or not. (85%) of the respondents 'agreed' with the statement, while (10%) were 'not sure' and only (5%) 'disagreed'. It is quite obvious that the vast majority of the respondents believed that Turnitin has helped the students to rewrite their papers and the software is quite helpful to students in this respect. This supported by students should be encouraged to use electronic detection software as a tool for crafting, redrafting and trying their submissions in Turnitin before sending in their final papers (Bretag & Mahmud, 2009). Additionally, item (14) indicated that (85%) of the respondents 'agreed' that Turnitin is an effective method to educate students about the boundary of the internet plagiarism, while (10%) were 'not sure', and only (5%) 'disagreed' with the statement. It could be argued that Turnitin has many advantages and strengths according to the respondents' views and it could be used as instructional tool for helping students to learn many values of good practices.

Table 3. Faculty's negative views & experiences about Turnitin limitations

No	Statements	Agree		Not Sure		Disagree	
	Limitations	**F**	**%**	**F**	**%**	**F**	**%**
14	Turnitin software does not detect all plagiarism cases among students such as unattributed paraphrase.	14	70	4	20	2	10
15	Turnitin does not detect whether the used reference is the correct one or not.	12	60	7	35	1	5
16	Turnitin can produce inaccurate reports that indicate plagiarism it doesn't exist and miss plagiarism where it does.	9	45	8	40	3	15
17	Using Turnitin creates a poisonous atmosphere between teachers and students.	2	10	3	15	13	65
18	Turnitin should be used as an instructional tool rather than a crime detection method.	16	80	2	10	1	5
19	Turnitin generates only numbers which may require further interpretations.	11	55	2	10	7	35
20	It takes a considerable time and effort to be familiar with the use of Turnitin.	7	35	4	20	8	40
21	Training students in using Turnitin could decrease plagiarism practices among students.	13	65	3	15	2	10

This table (3) depicted the faculty views and reflections about Turnitin limitations and shortcomings. As for item (14), this indicated that Turnitin does not detect all plagiarism cases among students' papers such as unattributed paraphrase. (70%) of the respondents 'agreed' that Turnitin is not effective to detect all plagiarism incidents, whereas (20%) were 'not sure' and (10%) disagreed with statement. This is consistent with the argument that the high percentage of text-match is not necessarily an indicator of any form of plagiarism. Nevertheless, anti-plagiarism technology is criticized because some of the detected word matches are not instances of plagiarism (Mulcahy & Goodacre, 2004, cited in Warn 2006).*'The software doesn't detect whether the matching word string is contained within quotation marks, or whether a stated reference is the correct one or not"* (Warn, 2006:200).

Moreover, item 15, indicates that (60%) of the respondents believed that Turnitin does not detect whether the used reference is the correct one or not, (35%) were 'not sure'. On the other hand only (5%) responded by 'disagree'. Regarding item 16, (45%) of the respondents 'agreed' that Turnitin can produce inaccurate reports, whereas (40%) were 'not sure', and (15%) 'disagreed' with the statement. These findings are consistent with research findings on Turnitin (Bishop, 2006, Royce, 2003, cited in Williams, 2007) shows that Turnitin can produce inaccurate reports that indicate both plagiarism where it doesn't exist and miss plagiarism where it does. It could be argued that Turnitin reports should be handled with care before decision with regard to plagiarism is made.

As for item 17, was designed to explore respondents' views about whether they believe or not that the use of Turnitin can create a poisonous atmosphere between teachers and students or not. (10%) only 'agreed, while (15%) were 'not sure' and (65%) 'disagreed' with the statement. This fining is supported by (Williams, 2007, Scanlon, 2007:164) who claimed that using anti-plagiarism software may destroy trust between students and instructors and introduce mutual distrust and students may feel sensitive to the lack of trust. Concerning item 18, (80%) believed that Turnitin should be used as instructional tool and should be integrated into instruction rather than to be used as a crime detection method. On the other hand, (10% were 'not sure', and only (5%) disagreed with the statement. These findings are supported by the literature (Warn 2006:206) suggests that cyber-plagiarism can be controlled if it is embedded within the teaching objectives of the course and become a part of the instruction. Plagiarism should be a part of pedagogy and it should be embedded within instruction (Lee, 2011). Faculty should act as educators, rather than as detectives the, focus should not be diverted to detection than instruction (Scanlon 2007:161). In response to item 19, (55%) of the respondents believed that Turnitin could generate only numbers which require further careful interpretations, (10%) responded by 'not sure', and (35%) 'disagreed'. As for item 20, (35%) of the respondents 'agreed' that learning to use Turnitin demands a considerable time to be mastered, (20%) were 'not sure', and (40%) 'disagreed' with the statement. These findings accord with (Barret & Malcolm 2006 cited in Bretag & Mahmud 2009) maintain that the software could indicate *possible* plagiarism rather than providing a complete certainty. Therefore, 'manual verification' is needed to determine if text matches represent unethical or legitimate duplication (Errami et al. 2007, 2008 cited in Bretag & Mahmud 2009). Concerning item 21, (65%) believed that training students in using Turnitin could help in decreasing plagiarism practices, (15%) were 'not sure' , and only (10%) disagreed with the statement. It could be argued that training students in using software can help in decreasing plagiarism incidents among students because they would be aware of how use the software in an effective manner.

5.2 Analysis of Students' Questionnaire

Table 4. Students' responses about their use of Turnitin

No	Statements	Always		Sometimes		Never	
		F	**%**	**F**	**%**	**F**	**%**
1	Have you ever used Turnitin anti-plagiarism detection software?	35	70	10	20	4	8
2	Have you ever being trained in how to use Turnitin?	10	20	32	64	8	16
3	Have you changed your work after seeing the Turnitin report?	40	80	4	8	3	6

This table (4) displays students' responses with regard to their use of Turnitin. As for question 1, students were asked whether they ever used Turnitin anti-plagiarism software or not. (70%) of the respondents responded by 'always', (10%) responded by 'sometimes', and only (8%) responded by 'never'. It is quite evident that the majority of the students 'always' use Turnitin. It could be argued that Turnitin is widely used by students and it is very popular among them. Regarding item 2, (20%) of the students said that they always receive training on how to use Turnitin, (64%) responded by 'sometimes' and (16%) never used the software. As for question 3, (80%) of the respondents said that they always change their papers after seeing the Turnitin originality report, while (8%) of the respondents responded by 'sometimes', and only (6%) said they never changed their reports they fed them to the system.

Table 5. Students' positive views & experiences about Turnitin

No	Statements	Agree		Not Sure		Disagree	
		F	**%**	**F**	**%**	**F**	**%**
4	Using Turnitin has raised my awareness to avoid internet plagiarism and academic offences.	37	74	3	6	7	14
5	Turnitin has helped me to improve my referencing and academic skills and reflect on my study.	33	66	6	12	8	16
6	Turnitin is useful and should be used by all students.	26	52	4	8	20	40
7	Turnitin is effective tool to detect my assignments plagiarism and made me think about my writing.	32	64	8	16	9	18
8	Using Turnitin has helped me to learn about ethical standards regarding dishonesty.	21	42	11	22	8	16
9	Using Turnitin has helped me to detect plagiarism in advance and re-write and edit my papers effectively.	40	80	2	4	6	12
10	Turnitin has enabled me to understand what plagiarism is.	36	72	6	12	7	14

This table (5) illustrates the respondents" positive views and experiences with the use of Turnitin.(70%) of the respondents 'agreed' that Turnitin has raised their awareness to avoid internet plagiarism and other academic offences, while only (6%) were 'not sure', and (14%) disagreed with the statement. As for item 5, (66%) believed that Turnitin has

helped them to improve their referencing, reflection and academic skills, (12%) of the respondents were 'not sure', and (61%) 'disagreed'. Regarding item 6, the questionnaire revealed that (52%) of the respondents 'agreed' that Turnitin is useful and should be used by all students, on the other hand, (8%) were 'not sure', and (40%) 'disagreed' with the statement. Concerning item 7, whether Turnitin is an effective tool for detecting plagiarism and make them think about their writing, (64%) believed that Turnitin is effective tool for detecting plagiarism,(16%) were 'not sure', and (18%) 'disagreed'. It could be argued that Turnitin is effective tool in tackling plagiarism cases. As for item 8, whether Turnitin has helped students to learn about ethical standards regarding dishonesty, (42%) 'agreed' that with the statement, while (22%) responded by 'not sure', and only (16%) 'disagreed'. Moreover, item 9, (80%) of the respondents reported that Turnitin has helped them to detect plagiarism in advance and rewrite their assignments before their final submission, and (12%) 'disagreed' with the statement. Finally, as for item 10, (72%) of the respondents believed that Turnitin has helped them to understand what plagiarism in, (12%) of the respondents were 'not sure', and only (14%) 'disagreed' with the statement.

Table 6. Students' negative views & experiences about Turnitin

No	Statements	Agree		Not Sure		Disagree	
		F	**%**	**F**	**%**	**F**	**%**
11	Using Turnitin has caused distrustful relationships between me and my instructors.	14	28	8	16	25	50
12	I find it difficult and confusing to understand and interpret the Turnitin originality report of my papers.	39	78	4	8	5	10
13	It took me a considerable amount of time and effort to learn how to use Turnitin software.	28	56	10	20	11	22
14	Turnitin doesn't allow me to check my papers in advance before the submission.	10	20	6	12	34	68
15	Plagiarism detection software does not change my learning behavior.	18	36	21	42	10	20
16	Turnitin doesn't detect all matches and plagiarism cases.	32	64	16	32	2	4
17	I know how to deceive the software to avoid plagiarism detection.	23	56	5	10	16	32

Items (11-17) were designed to explore students' views about students' respondents with regard to the use of Turnitin has caused distrustful relationships between them and their instructors. (28%) 'agreed' with the statement, while (16%) were 'not sure', and (50%) 'disagreed'. As for item 12, (78%) 'agreed' that they find it difficult to understand Turnitin originality report, (8%) were 'not sure', and (10%) 'disagreed' with the statement. It could be argued that understanding Turnitin originality report is not an easy task; therefore, teachers need to help their students to understand the reports in details. Concerning item 13, a considerable number of the students (56%) 'agreed' that it took a considerable amount of time and effort learn how to use Turnitin, whereas (20%) responded by 'not sure', and only (22%) 'disagreed' with the statement. Moreover, item (14) indicates that (20%) of the respondents' 'agreed' that Turnitin doesn't allow them to check their papers in advance before the submission, (34%) were 'not sure', and (68%) of the respondents 'disagreed' with the statement. It is quite clear that the great majority of the students believed that Turnitin has helped them to check their papers in advance. As for item (15%) 'agreed' that plagiarism detection doesn't change their learning behavior, 42 of the respondents' were 'not sure', and (20%) 'disagreed'. Concerning item 6, students were surveyed whether Turnitin could all plagiarism matches and cases or not, (64%) 'agreed' with the statement, (32%) were 'not sure', and only (4%) 'disagreed'. Finally, item 17, is designed to explore whether the students are capable of deceiving and misdirecting the software or not,(56%) 'agreed', and (15%) were 'not sure' , (32%) disagreed with statement. These findings are supported by the literature that Turnitin can be deceived and misdirected to reduce the similarity score by replacing a single letter throughout a document with an alternative, such as all instances of 'a' are replaced by 'a', then the user creates a macro linked to the document such that when the file (containing the replaced characters such as 'a') is opened the macro automatically replaces the altered character to the original form. This would disable the system from detecting the matches (Jones, & Moore, 2010:427).

6. Conclusion & Recommendations

The present study has several limitations such as the sample size. The survey of 20 instructors and 50 students may not yield solid results. Secondly, using a follow up interview along with the questionnaire could have been helpful in strengthening the research data and findings.

Based on the study findings, the study puts forward some recommendations which might help practitioners to use anti-plagiarism software in an effective manner which would help in minimize cyber-plagiarism practices among students. Firstly, anti-plagiarism software should be integrated into instruction and teachers, students and practitioners are advised to train their students on how to use then and how to interpret originality reports of their papers. Secondly, students should be encouraged to use anti-plagiarism software to check their papers in advance before their final submissions. Finally, it is recommended that teachers shouldn't' act as detectives instead help their students to understand what plagiarism is and cultural issues and images that associated with plagiarism practices in their teaching context.

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