

Assessing the Awareness and Implementation of Anti-Plagiarism Tools by Postgraduate Students in the University of Port Harcourt, Rivers State

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Abstract: This study utilized descriptive survey design in assessing the awareness and implementation of anti-plagiarism tools by post-graduate students in the University of Port Harcourt, Rivers State, Nigeria. Two research questions and two null hypotheses guided the study. A sample size of 393 comprising of 278 Masters' students and 115 Ph.D. students drawn from the population of 557 was used for the study. The instrument for data collection was titled "Awareness and Implementation of Anti-Plagiarism Tools Checklist (AIAPC), and was developed by the researchers. Both face and content validities of the instrument were determined. Mean (\bar{x}) and standard deviation (\pm) were used to answer the research questions, while independent t-test was used to test the hypotheses at 0.05 alpha level. The results revealed that the Ph.D. students are more aware of the various anti-plagiarism tools than the Masters students based on the weighted mean score (Ph.D. $2.38 \geq$ Masters 1.65). The results also revealed that both the Ph.D. and the Masters students have poor implementation of the various anti-plagiarism tools. This was shown in their weighted mean scores which is less than the criterion mean score of 2.50 ($1.65, 2.38 \leq 2.50$). Based on the result, it was recommended among others that post-graduate students should be exposed to courses on plagiarism.

Keywords: Assessing, awareness, implementation, anti-plagiarism.

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INTRODUCTION

Education is the roadmap to national development. Education equips people with worthwhile knowledge and information for successful transition through the leaps and bounds of life. No wonder then that Information is referred to as survival power pack of the 21st century. Education as a Latin word 'educere' means 'to lead out', hence, the effect of education transcends what is limited by bricks and mortar, and education provides the enabling ground for lifelong learning. Consequently, the illiterates of our society are not those who cannot read nor write, but those who cannot learn, unlearn and relearn. Those who cannot acquire new knowledge to update, replace, adopt or improve upon their previously acquired knowledge, are powerless and therefore, wallow in ignorance. Thus Annan (1997) opined that;

"Literacy is a bride from misery to hope. It is a tool for daily life in modern society. It is a bulwark against poverty, and a building block of development, an essential complement to investments in roads, dams, clinics and factories. Literacy is a platform for democratization, and a vehicle for the promotion of

cultural and national identity ...literacy is, finally, the road to human progress and the means through which every man, woman and child can realize his or her full potential."

The Nigerian society in her lofty Policy of Education perceived education as a veritable tool for empowerment and human capacity development. Hence, it is expected the citizenry will be empowered through education to contribute meaningfully to the society, because it guarantees them access to unlimited world of power (knowledge).

However, education utilizes research as an important tool for realization of educational objectives. Proficiency of researchers in the world has divided the countries of the world into developed and developing countries. Such research (education) is a crucial index that determines a developed nation. Hence, developed nations can continually improve the social wellbeing of her citizenry through the provision of such social services as medical care, infrastructure, quality education and other amenities, while developing nations are either providing half or struggling to provide any.

Thus, research is a scientific activity that involves procedures for acquisition of new knowledge with minimal mistakes or error, carried out to proffer solutions to an existing human problems or creation of new body of knowledge for the advancement of human society. Therefore, adherence to systematic procedures of research activities is guide research for plausible research outcome towards providing solutions to the multi-faceted problem of man.

The society is becoming inundated with technological tools and new problems are emerging on daily basis. Researchers are encouraged to produce more research more than ever. This situation however, could be tempting as intentional, and/or unintentional replication of another researcher's work is not limited, hence, the concept of plagiarism. Innovations are encouraged in research however, it is a standard practice to acknowledge the authors of ideas when using (citing) part of the ideas of such authors. No doubt, such academic blunder has the capacity to plunge a nation to an unprecedented developmental redundancy. Yet, Mete (2014) opined that plagiarism is on the increase among academicians. Section 8.11 of ethical code of conducts by American Psychological Association (2010), assert that "psychologists do not present portions of another's work or data as their own, even if the other work or data source is cited occasionally." According to Vinod, Sandhya, Sathish, Harani, Banji and Banji (2011) plagiarism means; Stealing others themes, technology, ideas, words and report either verbally or in writing as one's own. Extension of an idea or product from established sources with credibility. Theft in literature and arts without giving required credits or permission, make use of others production.

This is true, because since the inception copyright law in 1709, authors are granted the sole print to their original works for at least twenty-one years. Consequently, plagiarism can be defined as the unlawful use or infringement on the original work of another. Vinod et al., (2011) assert that; academic institutions all over the world try to inculcate ethical values among students 'Graduate Honour System' or 'Graduate Honour Code' etc. so that they are taught how to give credit, to ideas, where they are due translations, part of a report, drawings, designs and photographs, maps, graphs, illustrations, tables, primary data, derived equations, computer programs, verbal communications of information and ideas, and other sources may also constitute plagiarism, unless the source is acknowledged and properly documented (pg. 3).

In view of the issue of plagiarism, many academic institutions has designed means of checking students work for plagiarized works while some rely on the many available commercial plagiarism checker software and applications. Some common plagiarism

checkers are Turnitin, iThenticate, Grammarly, Plagscan, Plag Tracker, DupliChecker, Paperrater, Plagiarisma, Plagium, CopyLeaks, Unplug Checker, WhiteSMoke, ProWritingAid, Quetext, SmallSEOTools, Viper, Copyscape, DMCA Scan, Dustball, WebConf tool, Unicheck, etc., and some added as a utility in word processing software. However, according to Rao (2008), it is important to note that plagiarism software or application can detect only word-word plagiarism, while, detection of data manipulation, change in references, adoption of ideas of others, among others are sometimes difficult to spot.

Plagiarism, which is the most common problem in the academic world of today, is an increasing problem amongst undergraduate and post-graduate students (Whittle & Murdoch-Eaton, 2008). Recent years have witnessed the emergence and proliferation of a new form of plagiarism, from digital sources, which offers new opportunities and ease of access and which poses particular challenges across the whole education sector globally. Students now have ready access to a huge variety of digital sources, including full-text CD-ROM databases and electronic journals on the Internet (Ashworth, Bannister, & Thorne, 1997), most of which are rapidly accessible 24 hours a day, 7 days a week and can be downloaded from the safety and comfort of their own rooms. Material on the internet is particularly accessible via effective search engines such as Google.com (Lathrop & Foss, 2000; Laird, 2001), which is why institutions especially in Europe are taking steps to cope with the expected rise in the incidence of student plagiarism (Baty, 2000).

Plagiarism is quickly becoming part of our educational culture. More and more students are turning to the internet for quick "shortcuts" around the rewarding but time-consuming work of writing research papers (Whittle & Murdoch-Eaton, 2008). With the advent of the internet, plagiarism seems to be on the high as the "copy and paste" system it provides has made online files easily transferable (Harper, 2006), with the result that more people have access to the information there in (Tapscott, 2009), and can use, transfer and incorporate the information obtained online into their personal work, presenting students with more opportunities to use another's work - ethically or otherwise (Etter, Jackie, & Seth, 2006; Stephens et al., 2007). Sharing of files has become a technology as well as a feature of modern learning as Etter et al. (2006) mentions, and students enhance their learning through active participation by sharing digital files.

Research on university student plagiarism has sharply increased in recent years. This has been accompanied by an on-going debate within universities and related institutions. The large number of tagged items in social sciences points to global problems in under and post-graduate education confounding the lack

of understanding of plagiarism, cheating, and other forms of academic dishonesty among students who may choose to write and publish articles later in life (Gasparyan, Nurmashev, Seksenbayev, Trukhachev, Kostyukova, & Kitas, 2017). Comparative analyses suggest that young, undergraduate students, those in business studies and engineering, and residents of non-Anglophone countries frequently cheat and violate established norms of publication ethics (Park, 2003; Wheeler, 2009; Arda, 2012). In some Asian countries, plagiarism is viewed as a social phenomenon rooted in the dogmatic system of education, encouraging reuse of textbook information and suppressing creative thinking and generation of untested ideas (Chaurasia, 2016). Poor education and unethical source use lead to plagiaristic writing by Taiwanese college students (Chien, 2017). Similar conclusions were drawn based on anti-plagiarism software checks of Malaysian undergraduate students' essays, containing large chunks of copied texts from easily accessible online sources without proper paraphrasing and referencing (Zangenehmadar & Hoon, 2017). Finally, a report from Korea found that first-year medical students, who are unaware of what constitutes research misconduct, often write their papers by copying material from a limited number of easily accessible online platforms, such as Google, and do not cite the sources used (Kim, 2016).

A cross-cultural study of plagiarism perceptions suggested that students from Germany are more sensitive toward plagiarism and better skilled to identify academic dishonesty than their Turkish and Georgian peers (Kayaoğlu, 2016). Likewise, a survey of Australian and Chinese undergraduates concluded that Australians are more negative toward plagiarism (Ehrich, 2016). Although cultural, linguistic and psychological factors determine the behaviour of plagiarists, the lack of institutional anti-plagiarism policies is believed to play a more important role (Hu & Sun, 2017). Academic institutions across the world differ widely in their definitions of plagiarism, practices of preventing academic dishonesty, and research methodology courses for students, deficiencies of which lead to instances of unintentional plagiarism in some countries (Bretag, 2013; Kokkinaki, Demoliou, & Iakovidou, 2015; Varghese & Jacob, 2015).

The lack of post-graduate courses on plagiarism is reflected in poor citing and referencing skills of Iranian medical students, who may plagiarize in their first articles but become more conversant with research integrity by publishing more (Gharedaghi, 2013). Similar trends are observed elsewhere in the world, suggesting that technological advances and educational initiatives reduce the occurrence of 'copy-and-paste writing' over time (Curtis & Vardanega, 2016). A large survey of Pakistani Bachelor degree medical students proved that training on research ethics improves their perception of plagiarism to a level comparable to that of the faculty (Rathore, 2015). For

non-medical international Master students, librarian-guided courses on legal and ethical aspects of research, proper citing, referencing and paraphrasing have also proved successful for better understanding of plagiarism and its consequences (Gunnarsson, 2014). Oversights in the system of education along with numerous short-cuts in the process of preparing student works add to the problem of plagiarism. Students with poor time management, inadequate English writing skills and lacking sufficient support by their mentors often refer to commercial editing agencies for ghost-writing or otherwise unethical services (Jones-Berry, 2016). The globally mushrooming 'contract cheating' services are also good examples of how outsourced writing assignments turn into fraud and plagiarism (Draper, Ibezim, & Newton, 2017). The term was first coined by experts in computer science from Birmingham City University (Birmingham, UK), who described unethical online bid requests to get students' coursework completed by third parties (Lancaster & Clarke, 2008). Students committing such an academic dishonesty usually lack English language skills and seek advanced professional services by paid contractors (Rigby, 2015). Consequently, the issue of plagiarism calls for urgent attention. In tackling this issue of plagiarism, researchers have proffered working models to check plagiarism and manage its occurrence (Orim et al., 2013). The means of checking plagiarism and managing its occurrence can be achieved by plagiarism detection tools.

Plagiarism detection can be either manual or computer-assisted. Manual detection requires substantial effort and excellent memory, and is impractical in cases where too many documents must be compared, or original documents are not available for comparison. Computer-assisted detection allows vast collections of documents to be compared to each other, making successful detection much more likely (From Wikipedia, the free Encyclopaedia). The most accurate way to detect plagiarism is to take a "fingerprint" of a paper - defined by structure, words, and content - and compare it with papers stored in an electronic archive or on the internet. The emergence of these software and web based services together with powerful computers and their ability to mine large electronic databases for instances of plagiarism promises to revolutionize the peer review process and raise the quality of published research everywhere (Vij, Soni, & Makhdumi G, 2009). Discussing the effectiveness of anti-plagiarism software, Ali, Dahwa, and V'acav (2011) observed that there is no plagiarism software that can prove that a document has been 100 per cent plagiarised as such software has its merits and limitations, according to their features and performance. Patil (2015) highlighted different software's that deals with plagiarism, guide researchers and assist students and teachers for validating text. The paper also discusses the characteristics and restrictions of the plagiarism software such as Turnitin, iThenticate, Urkund, Anti-

Plagiarism, Dupli Checker, Paper Rater, Viper, Plagium, Plagtracker, Plagscan. Chowdhury and Bhattacharyya (2016) presented in survey different forms of plagiarism and discussed them. The paper also focused on a few methods for plagiarism detection based on machine learning techniques. The pros and cons of these methods are analysed, and the issues and challenges are also listed in the paper. Several methods which are available to detect the plagiarism are also highlighted in the paper such as: Character-based methods, vector-based methods, syntax-based methods semantic-based methods, methods for cross-lingual plagiarism detection, grammar semantics hybrid plagiarism detection methods, classification, and cluster-based methods, and citation-based methods. University student plagiarism is considered a major problem and a serious breach of academic standards that jeopardizes the quality of the courses offered, the validity and applicability of the codes of honour and the reputation of universities in general (Luke & Kearins, 2012; Park, 2004). This concern has been expressed by many scholars, pointing that such wrongdoing in academia calls for a review of institutional procedures with the aim of improving practices and universities' codes of conduct (Duggan, 2007). It is for the foregoing that this paper hopes to assess the knowledge and implementation of anti-plagiarism tools by post-graduate students.

Research is expected to produce results capable of transforming human society. However, issues associated with plagiarism are harbingers of redundancy in plausible research outcomes. It is based on this foreground that this study aimed at assessing the knowledge and implementation of post-graduate students towards anti-plagiarism tools.

The aim of this study is to assess the awareness and implementation of anti-plagiarism tools by the postgraduate students in the University of Port Harcourt. Specifically, the following objectives guided the study.

1. To access the extent Masters/Ph.D. students are aware of various anti-plagiarism tools.
2. To determine the extent Masters/Ph.D. students implement the various anti-plagiarism tools.

The following research questions guided the study

1. To what extent do Masters/Ph.D. students are aware of various anti-plagiarism tools?
2. To what extent do Masters/Ph.D. students implement anti-plagiarism tools?

The following null hypotheses tested at 0.05 alpha level guided the study

1. Masters/Ph.D. students do not significantly differ in the awareness of various anti-plagiarism tools.
2. Masters/Ph.D. students do not significantly differ in the implementation of various anti-plagiarism tools.

METHODS

This study adopted descriptive survey design. The population for the study include all the 557 post-graduate students that are registered in Donald E. U. Ekong Library, University of Port Harcourt for the 2018/2019 Academic session (Source: Donald E. U. Ekong Library Students Registration Data, 2019). Simple random sampling technique was utilized to sample 393 respondents using the minimum suitable sample size from population by Kpolovie (2018). The researchers utilized a self-constructed instrument titled "Awareness and Implementation of Anti-Plagiarism Tools Questionnaire" (AIATQ) for data collection. Also, ethical standards were strictly adhered to in data collection. The instrument was administered on a face-to-face basis. Data were analyzed using mean and standard deviation for the research questions, while independent t-test for testing the null hypotheses at 0.05 alpha level.

RESULTS

Table-1: Demographic properties of the respondents

S/N	Respondents	Frequency	Percentage
1	MSc	278	70.7
2	Ph.D	115	29.3
	Total	393	100

Table-2: Awareness of Masters/Ph.D students on common anti-plagiarism tools

S/N	Anti-plagiarism tools	Masters Students		Decision	c. \bar{x}	Ph.D. Students		Decision
		\bar{x}	\pm			\bar{x}	\pm	
1	Turnitin	2.54	1.33	Agree	2.50	2.51	2.06	Agree
2	iThenticate	2.46	1.46	Disagree		2.52	1.66	Agree
3	Grammarly	2.75	1.13	Agree		2.62	1.91	Agree
4	Plagscan	2.69	1.15	Agree		2.84	1.51	Agree
5	Plag Tracker	2.09	2.42	Disagree		2.33	1.77	Disagree
6	DupliChecker	2.36	1.32	Disagree		2.47	1.47	Disagree
7	Paperrater	2.18	1.53	Disagree		2.69	1.27	Agree
8	Plagiarisma	2.16	1.51	Disagree		2.50	1.40	Agree
9	Plagium	2.32	2.78	Disagree		2.60	2.20	Agree
10	CopyLeaks	2.52	1.05	Agree		2.51	1.08	Agree
11	Unplug Checker	2.44	3.01	Disagree		2.51	1.11	Agree
12	WhiteSmoke	2.21	2.71	Disagree		2.34	1.33	Disagree
13	ProWritingAid	2.33	1.77	Disagree		2.50	1.45	Agree
14	Questext	2.23	1.90	Disagree		2.24	1.35	Disagree
15	SmallSEOTools	2.42	2.35	Disagree		2.50	1.51	Agree
16	Viper	2.16	3.12	Disagree		2.66	1.31	Agree
17	Copyscape	2.28	1.21	Disagree		2.51	1.16	Agree
18	DMCA Scan	2.14	2.25	Disagree		2.72	1.16	Agree
19	WebConf tool	2.19	1.52	Disagree		2.16	1.16	Disagree
20	Unicheck	2.58	2.28	Agree		2.71	1.24	Agree
	Weighted mean	≤ 2.50		Low		$2.51 \geq 2.50$		Moderate

N = 393

The Table 2 above illustrated the awareness of post-graduate students some identified anti-plagiarism tools. From the responses and calculated item by item mean score, it was observed that Masters' students are aware of Turnitin (2.54), Grammarly (2.75), Plagscan (2.69), CopyLeaks (2.52), and Unicheck (2.58) while they are not aware of iThenticate (2.46), Plag Tracker (2.09), DupliChecker (2.36), Paperrater (2.18), Plagiarisma (2.16), Plagium (2.32), Unplug Checker (2.44), WhiteSmoke (2.21), ProWriting (2.33), Questext (2.23), SmallSEOTools (2.42), Viper (2.16), Copyscape (2.28), DMCA Scan (2.14), and WebConf tool (2.19). On the other hand, Ph.D. students by their obtained mean scores are aware of Turnitin (2.51), iThenticate (2.52), Grammarly (2.62), Plagscan (2.84), Paperrater

(2.69), Plagiarisma (2.50), Plagium (2.60), CopyLeaks (2.51), Unplug Checker (2.51), ProWritingAid (2.50), SmallSEOTools (2.50), Viper (2.66), Copyscape (2.51), DMCA Scan (2.72), and Unicheck (2.71) while they are not aware of Plag Tracker (2.33), DupliChecker (2.47), WhiteSmoke (2.34), Questext (2.24), and WebConf tool (2.16).

Comparatively, while Ph.D. students are aware of 15 anti-plagiarism tools with a weighted mean score of 2.51 which is more than the criterion mean of 2.50, Masters students are aware of 5, with a weighted mean score of 2.35 which is below the criterion mean score, indicating a general poor awareness of anti-plagiarism tools by Masters students ($2.35 \leq 2.50$).

Table-3: Implementation of Anti-plagiarism tools by Masters and Ph.D students

S/N	Anti-plagiarism tools	Masters Students		Decision	c. \bar{x}	Ph.D. Students		Decision
		\bar{x}	\pm			\bar{x}	\pm	
1	Turnitin	2.57	0.17	Agree	2.5	2.68	1.12	Agree
2	iThenticate	1.65	0.05	Disagree		2.26	2.97	Disagree
3	Grammarly	1.89	3.18	Disagree		2.12	2.11	Disagree
4	Plagscan	2.96	2.32	Agree		3.41	2.01	Agree
5	Plag Tracker	1.75	1.07	Disagree		2.50	1.03	Agree
6	DupliChecker	1.50	2.94	Rejected		2.08	4.06	Disagree
7	Paperrater	1.23	3.65	Rejected		2.26	4.19	Disagree
8	Plagiarisma	1.35	3.84	Rejected		2.67	3.19	Agree
9	Plagium	2.19	2.20	Rejected		1.36	2.04	Disagree
10	CopyLeaks	2.37	1.19	Rejected		2.47	2.21	Disagree
11	Unplug Checker	1.55	4.99	Rejected		2.57	2.15	Agree
12	WhiteSmoke	1.37	2.85	Rejected		2.38	3.05	Disagree
13	ProWritingAid	1.31	2.75	Rejected		2.20	4.98	Disagree

14	Questext	1.46	1.90	Rejected	2.01	7.98	Disagree
15	SmallSEOTools	1.50	5.96	Rejected	2.04	2.94	Disagree
16	Viper	1.32	4.75	Rejected	2.11	2.01	Disagree
17	Copyscape	1.15	3.58	Rejected	2.09	2.03	Disagree
18	DMCA Scan	1.14	2.57	Rejected	2.08	3.98	Disagree
19	WebConf tool	1.18	2.62	Rejected	2.09	3.99	Disagree
20	Unicheck	1.65	2.71	Rejected	2.12	4.04	Disagree
	Weighted mean	1.65 ≤ 2.50		Poor	2.38 ≤ 2.50		Poor

N = 393

The Table 3 presents analysis on data collected on the implementation of anti-plagiarism tools by post-graduate students. In the order of hierarchy, Masters students implement only Turnitin and Plagscan with mean scores of 2.96 and 2.57, respectively, and the rest are not implemented. Ph.D. students implement only Plagscan with a mean score of 3.41, Turnitin with 2.68, Plagiarisma with 2.67, Unplug Checker with 2.57, and

Plag Tracker with 2.57, while the rest are not utilized. Both categories of students obtained below poor weighted mean scores – Masters’ students obtained 1.65 which is below criterion mean score of 2.50 and thus, indicates poor implementation ($1.65 \leq 2.50$), and Ph.D. Students obtained 2.38, which also is below 2.50 and translate to poor implementation as well ($2.38 \leq 2.50$).

Table-4: Mean comparison on Awareness of Anti-plagiarism tools by Masters/Ph.D. students

Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Awareness of Anti-Plagiarism Tools	Equal variances assumed	4.032	.965	-.129	391	.897
	Equal variances not assumed			-.129	213.813	.897

The analysis on Table 4 compared the mean obtained from masters students and Ph.D. students, and on the t-test for equality of means (equal variances assumed $F = 4.032$, $p \leq 0.965$), the t value of -0.129 obtained is not statistically significant at 0.05 alpha

level ($t = -0.129$, $p \leq 0.897$). Thus, the null hypothesis that Masters/Ph.D. students do not significantly differ in the awareness of various anti-plagiarism tools is accepted.

Table 5: Mean comparison on Implementation of Anti-plagiarism tools by Masters/Ph.D. students

Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Df	Sig. (2-tailed)
Implementation of Anti-Plagiarism Tools	Equal variances assumed	11.468	.001	12.728	391	.000
	Equal variances not assumed			15.111	321.121	.000

Table 5 above shows that there is significant difference in the implementation of anti-plagiarism tools by Masters and Ph.D. students. From the equal variances not assumed ($F = 11.468$, $p \geq 0.001$), the calculated t obtained as 15.111 with degree of freedom of 321.121 is statistically significant at both 0.05 and 0.01 alpha levels ($t = 15.111$, $p \geq 0.05$, 0.01). Consequently, the null hypothesis that there is no significant difference in the implementation of anti-plagiarism tools by Masters and Ph.D. students is rejected and the alternate accepted. This implies that there is a significant difference in the implementation of anti-plagiarism tools by Masters and Ph.D.

DISCUSSION

The study assesses the awareness and implementation of anti-plagiarism tools by post-graduate students. Alarmingly, the findings revealed that Master students are aware of few anti-plagiarism tools. This finding is in agreement with Whittle & Murdoch-Eaton, (2008) as they state that plagiarism is an increasing problem amongst undergraduate and post-graduate students. Also, the finding supports the opinion that the large number of tagged items in social sciences points to global problems in under and post-graduate education confounding the lack of understanding of plagiarism, cheating, and other forms of academic dishonesty among students who may

choose to write and publish articles later in life (Gasparyan et al., 2017). However, the finding from the Ph.D. respondents shows that they obtained a weighted mean score of 2.51, which indicates a moderate anti-plagiarism awareness level ($2.51 \geq 2.50$). This is in sharp contrast with the above assertion. Understandably, some researchers assert that issues of plagiarism are prominent among young researchers (Park, 2003; Wheeler, 2009; Arda, 2012). The null hypothesis tested indicated that there is no significant difference between the mean scores of Master students and Ph.D. students on awareness of anti-plagiarism tools. Consequently, post-graduate students of the University of Port Harcourt do not differ significantly in their awareness of anti-plagiarism tools.

Furthermore, it was discovered that Master students' implementation of anti-plagiarism tools was poor. For the Ph.D. students, it was discovered that they are aware of some anti-plagiarism tools, yet, awareness does not equate utilization as their utilization of the tools are equally poor. The test of hypothesis shows significant difference in the implementation of anti-plagiarism tools by post-graduate students of the University of Port Harcourt. This result is in consonance with the statement that the lack of post-graduate courses on plagiarism is reflected in poor citing and referencing skills of post-graduate students (Gharedaghi, 2013). Hence, Gunnarsson (2014) suggested that university courses on legal and ethical aspects of research, proper citing, referencing and paraphrasing would provide better understanding of plagiarism and its consequences among post-graduate students.

The findings are not surprising to the researchers as literature and personal observations exposes the lack of post-graduate courses on plagiarism which according to Gharedaghi (2013) is reflected in poor citing and referencing skills of post-graduate students. In the case of University of Port Harcourt, most post-graduate students usually have their first knowledge about anti-plagiarism on their inception into the Master's programme, consequently, they are conditioned with or without self-motivation to learn about anti-plagiarism for the first time in most cases. They are conditioned in the sense that the rule states that the minimum plagiarism percentage for accepting Masters dissertation is 15%, while it is 20% for Ph.D. thesis. Also, there are cases of students with poor time management, inadequate research writing skills and lacking of sufficient support by their mentors often refer to commercial editing agencies for ghost-writing or otherwise unethical services.

CONCLUSION

This study examined awareness and implementation of anti-plagiarism tools by post-graduate students of the University of Port Harcourt. Literature revealed that institutions in developing

nations which is the case of the locale of the University of Port Harcourt do not have institutionalised courses situated to educate post-graduate students on the ethics of research writing especially as it relates to plagiarism and its consequences. As such courses on legal and ethical aspects of research writing, proper citing, referencing and paraphrasing have proved successful for better understanding of plagiarism and its consequences among post-graduate students. Courses will be beneficial to young scholars who may plagiarize in their first articles to become more conversant with research integrity by publishing more. This is important as such oversights in the system of education along with numerous short-cuts in the process of preparing student works add to the problem of plagiarism. Thus, constituting retardation clog in the wheels of plausible research processes ultimately affect the developmental process of the nation.

RECOMMENDATIONS

Based on the findings of this study, the researchers recommend that;

1. Post-graduate students should be exposed to courses on plagiarism.
2. Graduate schools should employ various anti-plagiarism tools to encourage students to use the various ones available.
3. Plagiarism check should cover all post-graduate activities such as assignments, seminar presentations, etc. and not just the dissertation or thesis.

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