



## Management of Anti-Plagiarism Software for Postgraduate Students' Productivity in Universities in Delta State

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### Abstract

This study investigated the management of anti-plagiarism software for postgraduate students' productivity in universities in Delta State. Three research questions and two hypotheses guided the study. Descriptive survey design was adopted in the study. A sample size of 32 male and female Ph.D. students in educational management was drawn purposively in the study. The instrument used for data collection was questionnaire titled 'management of anti-plagiarism software for postgraduate students' productivity questionnaire'. The instrument was validated and reliability carried out using Cronbach Alpha method, which yielded and index of 0.85. Mean and standard deviation were used to answer the research questions, while t-test was used to test the hypotheses at 0.05 alpha significant level. The findings revealed among others that, the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State include: upgrading the anti-plagiarism software with modern research tools/procedures, ability to detect the slightest chance of plagiarized content and display percentage report, employing capable hands to operate the anti-plagiarism software in the school, ensuring that specialists manage the anti-plagiarism software are employed in the school, and ensuring that the reports of tested works are deleted from the data-base every six months to accommodate new ones. Based on the findings, it was recommended that, university administrators should employ administrative officers capable of managing anti-

plagiarism software for postgraduate students' productivity in Universities in Delta State.

### I. Introduction

Plagiarism is a bit difficult to tackle and manage in the academic environment both within the country and rest part of the world. It is a serious concern amongst those in academics (writers, students and teachers alike) and thus, the need to check for plagiarism is of paramount importance. Plagiarism is no mild act in the world of electronic-learning. It is the number one issue teachers and academic professors face with college assignments and researches of which students carry out. Plagiarism is essentially the imitation of someone else's work without giving them their due credit (Gipp, 2014). Wikipedia (2019) defines plagiarism as the "wrongful appropriation" and "stealing and publication" of another author's language, thoughts, ideas, or expressions, and the representation of them as one's own original work.

Plagiarism is a form of cheating which is done by taking the writings of others and then put in his own without any credit given to the origin (Barron-Cedeno, Rosso, Pinto & Juan, 2008). According to Zakiy and Ayu (2014), plagiarism is reuse of ideas, processes, results, or words of another person without giving information about the original author and source explicitly. Plagiarism is theft of idea which is a person's intellectual property right (Maurer, Kappe & Zaka, 2006). Plagiarism is a Latin word meaning the practice of claiming or implying original authorship or incorporating material from someone's written



or creative work in whole or in part into one's own without proper and due acknowledgement.

Various ways of plagiarising include copying someone else's work without citing them properly; paying an external writer/essay mill to write the essay on your behalf; stealing ideas and verbal conversations (overheard during discussions etc) and presenting them as your own; copying data from websites, library books and other sources verbatim; and using someone else's images, music, videos and even style of writing in your own work without their explicit permission. All these are punishable plagiarism examples found in academic environment. Plagiarism can equally and commonly be divided into 5 types. They include: direct plagiarism which involves copying someone's work verbatim (word by word) without giving credits; self-plagiarism which is all about copying or producing an assignment influenced by your own previous work (also called unintentional plagiarism); mosaic or patchwork plagiarism which involves quoting someone else's work without quotation mark or changing the language (of original work) while keeping the structure same; accidental plagiarism which is unintentionally forgetting to cite the original work, misquotation etc.; and outsourcing which is all about paying essay mills, friends, hiring article writers, bloggers to write on your behalf (Nwabueze, 2019). These series of plagiarism can be detected using plagiarism detection or anti-plagiarism software.

Anti-plagiarism or plagiarism detection is the process of locating instances of plagiarized work, text, research or document. The widespread use of computers and the advent of the Internet have made it easier to plagiarize the work of others (Culwin & Lancaster, 2001; Bretag & Mahmud, 2009). Detection of plagiarism can be undertaken in a variety of ways such as human detection and text-machine software (Macdonald & Carroll, 2006). Human detection is the most traditional form of identifying plagiarism from written work. This can be a lengthy and time-consuming task for the reader and can also result in inconsistencies in how plagiarism is identified within an educational institution (Bretag & Mahmud, 2009). Text-matching software (TMS), which is also referred to as "plagiarism detection software" or "anti-plagiarism" software, has become widely available in the form of both commercially available products as well as open-source software. TMS does not actually detect plagiarism per se, but instead finds specific passages of text in one document that match text in another document

(Bao & Malcolm, 2006). These anti-plagiarism softwares are known as 'plagiarism checker tools.

As at 2019, the top 11 best plagiarism checker tools as presented by Nwabueze (2019) include: Grammarly, Whitesmoke, Duplichecker, Quetext, Copyleaks, Plagium, Plagiarism Checker, Turnitin, PlagScan, and Plagtracker. These plagiarism tools are very effective in detecting plagiarized works in any educational institution around the world. They assist researchers in conducting their studies with copying other people's works. Though, when they copy from other people's works, they would cite and reference them. These plagiarism checker tools help staff and students to carry out original and quality works.

Grammarly is by far the best plagiarism checker tool for teachers and students alike in educational institutions. It is trusted by universities as it is an automated proofreader and plagiarism checker. According to Nwabueze (2019), Grammarly has a huge database of 16 billion web pages and ProQuest's databases; however, every document you process through it is instantly scanned by Grammarly's plagiarism checker to find any traces of similarity or copied content. Grammarly detects the slightest chance of plagiarized content and displays percentage report; has efficient grammar and punctuation checker (you sure can have different tools for this, but having everything in one place is a bonus); proofreader at its best along with free PDF report of all errors (including detected plagiarism) that can be exported; has the ability to scan document based on document style and type makes it even more efficient than its competitor plagiarism checkers; and emails weekly performance report (how many words you wrote, improvement in writing style, etc.) which is a good boost to improve one's English.

Whitesmoke Plagiarism Checker is one among the top plagiarism checking software that is very robust and accurate in determining plagiarized work in academic institutions. Whitesmoke's anti-plagiarism software is trusted by many academic institutions in the world (Wikipedia, 2019). It scans billions of online web pages and resources to check for unoriginal content or copied content in one's document and displays the same. It is a cross platform supported and available online, which is easy to use for research papers.

Duplichecker is one of the best free plagiarism checkers for teachers and writers in educational institutions. It does not cost a dime; it helps in outsourcing of lots of online content (blog articles) from freelance writers. It helps one in



preparing an academic essay, thesis or any other assignment. It is a free online tool that helps in detecting plagiarism. It provides over 50 scans for duplicate content each day, which makes it ideal for teachers to bulk check essays/papers.

PlagScan is a reliable plagiarism checker tool that focuses on helping teachers, students and online content creators. It is extremely useful if one wants to review a study for plagiarized content (unintentional plagiarism) before submitting it to your college professor or content authority (Wikipedia, 2019). It is an efficient anti-plagiarism checker or software to check plagiarism that you miss while checking manually. Even if it is a paid tool, it offers one free trial of its plagiarism checker so you can use it to see if it matches your expectation. It can upload multiple file formats like Word Doc, PDF, rtf, etc. directly to the tool. The software was launched in 2009 by Markus Goldbach and Johannes Knabe. It is available in English, French, Spanish, and German Languages.

Quetext is a plagiarism checker and citation assistant used for academic progress. The free version is simple and intuitive where someone pastes text on their website and gets it matched for duplicate content across a database of web pages and others. With QueText's DeepSearch feature, the content is checked with contextual plagiarism. With contextual plagiarism, sentences in the essay get checked as a context of the neighbouring lines (Nwabueze, 2019). This makes it the best plagiarism checker for students to make sure that essay is error-free before submitting. Quetext however, is one of the best free plagiarism detector software for teachers, students, freelance writers and any content creator. Quetext seems to have a better search and match technology where it uses contextual analysis to find duplicate sentences/phrases that other tools can easily ignore.

Turnitin was developed by the combined efforts of professionals, computer scientists, and the academicians. It is appalled with a great number of features. It checks for similarity with internet versions, books, journals and magazine to reduce the scope of copying (Nwabueze, 2019). It has multi-language supports to check plagiarism in Spanish, German, French, Italian and English. Turnitin is mainly for building better teachers to improve student writing (Uma, 2016). Educators will benefit from free professional development opportunities in Turnitin Academy Live webinars. Turnitin can be customized and delivered according to the unique needs of each institution. Trainer modules are also available to

help build internal and site-level training capacity (Gayatri & Navalgund, 2012).

Plagium helps one to compare two documents side by side to detect similar content in them. It also helps one to check for duplicate content published not only across the web, but also on social media sites like Facebook. This unique feature has earned Plagium the 12th spot in the list of best plagiarism checkers online. This helps one find if someone has copied from social media sites or not. It creates institutional account and makes it available for multiple users in an institution. The paid version has multiple file uploading features where one can compare similarity of two writings (Nwabueze, 2019). All these anti-plagiarism tools when properly managed (i.e. provided and maintained in universities) will go a long way to enhance students' productivity.

Students' productivity in this context is all about students' output in the process of writing and defending their thesis and dissertations. However, proper management of the available anti-plagiarism softwares in the school system would enhance positive outputs among the students. Their active involvements in research procedures and techniques would support effective utilization of anti-plagiarism softwares for research and school management.

Management is the systematic process of organizing and maintaining any resource that is useful for individual growth and societal development. Nwabueze (2017) sees management as a systematic coordination of resources (human and material) needed for the enhancement of individual advancement in real-life opportunities and, the achievement of organizational set goals and objectives. It is a distinct process consisting of activities such as planning, organizing, actuating and controlling aimed at actualizing organizational set goals and objectives for global technology advancement. It is a process demanding the performance of specific functions to attain a greater height for global competitiveness.

University management is a systematic process of making use of human resources (academic and administrative staff), non-human resources (school buildings, instructional resources, finance and time) as well as proper research practices through teaching for the production of quality products and institutional growth (Nwabueze, Nwokedi & Edikpa, 2018). It involves proper planning of school activities, controlling, organizing, staffing, leading, coordinating and directing human and non-human activities for students' productivity in research, institutional



growth and nation building. However, management of anti-plagiarism software in educational institutions is a systematic process of making use of available anti-plagiarism resources in transforming staff and students to conduct quality research for the growth of individuals and institutional development. These activities are performed to determine and accomplish the predetermined objectives with the help of human and other resources for quality output (Terry, 2000). This enhances proper research and academic activities for individual growth and school development. It could also be regarded as an ideal systematic process of managing change in educational institutions through research for quality output and global competitiveness. It includes all the activities that leadership in the universities carry out in an effort to implement their quality policy such as quality research, quality planning, quality control, quality assurance and quality improvement (Oluwuo, Obaro & Nwabueze, 2013). According to Oluwuo, Obaro and Nwabueze, quality university management helps to build up strategic mechanisms that can assess the quality of student's admission, quality of academic staff, quality of physical infrastructural facilities, quality of teaching and learning experience, quality of students' assessment, quality of teaching methods, quality of research, and quality of curriculum content development for productive output.

University education management is a systematic process of providing, utilizing and maintaining the human, material, finance and time resources for effective academic and administrative functions in schools for better productivity (Nwabueze, 2016). It refers to the talent, skills, energies and knowledge of the people which can be applied in the writing of postgraduate thesis and dissertations. It comprises of the effective use of human and non-human resources in the organization through the management of people related activities and research using physical facilities as well as human related resources.

### Statement of the Problem

Using someone else's text without attribution is plagiarism, whether intentional or unintentional. Unintentional plagiarism of even a sentence or two can have serious consequences. For students, plagiarism often means a failing grade, academic probation, or worse. Fortunately, there is a tool that can help, which is online plagiarism checker. This can help one ensure that proper identification and citation of anything in-text is not 100 percent original.

Institutions using anti-plagiarism software to check or test the level of plagiarism on academic research works for staff and students must apply proper management techniques or principles to enhance quality output in the system. Quality productive reports on postgraduate thesis seem to be an indication of good writing skills and proper management of the anti-plagiarism softwares used in the system. These anti-plagiarism softwares have to be regularly managed such as upgrading the tools to meet with the standard placed for thesis writings. Also, it is important that works tested with the anti-plagiarism software be deleted from the data-base within a specific period of time (let's say 6-8 months) to avoid duplicating words or passages in the system. This would help to improve the quality of research outcomes from the system.

### Aim and Objectives of the Study

The aim of this article is to investigate the ways of managing anti-plagiarism software for postgraduate students' productivity in universities in Delta State. The objectives include to:

1. find out the types of anti-plagiarism software needed in academic institutions for students' productivity in universities in Delta State;
2. ascertain the perceived impacts of anti-plagiarism software on the academic productivity of students in thesis writing in universities in Delta State; and
3. find out ways of managing anti-plagiarism software for postgraduate students' productivity in universities in Delta State.

### Research Questions

The following research questions guided the study.

1. What are the types of anti-plagiarism software needed in academic institutions for students' productivity in universities in Delta State?
2. What are the perceived impacts of anti-plagiarism software on the academic productivity of students in thesis writing in universities in Delta State?
3. What are the ways of managing anti-plagiarism software for postgraduate students' productivity in universities in Delta State?

### Hypotheses

The following hypotheses were tested at 0.05 alpha significant level.

1. There is no significant difference between the mean scores of male and female Ph.D students in educational management on the perceived impacts of anti-plagiarism software on the





academic productivity of students in thesis writing in universities in Delta State.

- There is no significant difference between the mean scores of male and female Ph.D students in educational management on the ways of managing anti-plagiarism software for postgraduate students' productivity in universities in Delta State.

## II. Methodology

This study adopted a descriptive survey design. It had a population of 32 Ph.D. students in Educational Management for 2018/2019 academic session in Delta State University . They included 20 female candidates and 12 male candidates. All the candidates were used purposively as the sample size representing 100% of the population. The instrument used for data collection was

questionnaire titled 'management of anti-plagiarism software for postgraduate students' productivity questionnaire' developed by the researcher. The instrument was validated by three experts in the Department of Educational Management, and the reliability carried out in the University of Port Harcourt using Cronbach Alpha method. The result was calculated using Cronbach Alpha statistics, which yielded an index of 0.85. Mean and standard deviation were used to answer the research questions, while t-test was used to test the hypotheses at 0.05 alpha significant level.

## III. Results

**Research Question One:** What are the types of anti-plagiarism softwares needed in academic institutions for students' productivity?

**Table 1:** Mean Scores of respondents on the types of anti-plagiarism softwares needed in academic institutions for students' productivity

S/N	Types of anti-plagiarism softwares for students' productivity include:	Male (12)		Female (20)		Decision
		Mean	SD	Mean	SD	
1	Grammarly	3.28	1.94	3.21	1.52	Agree
2	Whitesmoke	2.89	2.05	2.76	1.62	Agree
3	Turnitin	3.54	1.87	3.35	1.50	Agree
4	Duplichecker	3.14	1.98	3.00	1.57	Agree
5	PlagScan	3.67	1.83	3.52	1.45	Agree
6	Quetext	2.59	2.14	2.61	1.64	Agree
7	Copyleaks	2.63	2.13	2.59	1.64	Agree
8	Viper	2.54	2.15	2.51	1.65	Agree
9	WordPress Plugin	2.61	2.13	2.58	1.64	Agree
10	Plagium	2.57	2.14	2.52	1.66	Agree
11	Copyscape	2.62	2.13	2.56	1.65	Agree
12	DMCA Scan	2.71	2.11	2.64	1.63	Agree
13	Dustball	2.66	2.12	2.62	1.64	Agree
14	Webconf Tool	2.55	2.15	2.52	1.66	Agree
15	Plagtracker	2.82	2.07	2.71	1.62	Agree
16	Plagiarisma	2.85	2.07	2.87	1.59	Agree
17	Unicheck	2.88	2.06	2.89	1.59	Agree
<b>Aggregate Mean Score</b>		<b>2.86</b>	<b>2.06</b>	<b>2.79</b>	<b>1.60</b>	<b>Agreed</b>

Data on table 1 present the mean scores and standard deviation of male and female Ph.D students on the types of anti-plagiarism softwares needed in academic institutions for students' productivity. They all agreed on the items in the table with mean scores greater than the mean criterion of 2.50. The aggregate mean scores of 2.86 and 2.79 for male and female Ph.D. students implies that, the items were agreed upon. Therefore, types of anti-plagiarism softwares needed in academic institutions for students' productivity in the process of writing research

thesis and dissertations include: Grammarly, Whitesmoke, Turnitin, Duplichecker, PlagScan, Quetext, Copyleaks, Viper, WordPress Plugin, Plagium, Copyscape, DMCA Scan, Dustball, Webconf Tool, Plagtracker, Plagiarisma, and Unicheck.

**Research Question Two:** What are the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities?



**Table 2:** Mean Scores of respondents on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities

S/N	Perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing include:	Male (12)		Female (20)		Decision
		Mean	SD	Mean	SD	
18	It enables one to track the e-Learning contents used all around the Internet	3.24	1.95	3.18	1.53	Agree
19	Reduces the speed at which Ph.D. candidates copy someone else's work without citing them properly	3.15	1.97	3.09	1.54	Agree
20	Helps the candidates to avoid paying external writers to conduct the study for them	3.18	1.96	3.15	1.53	Agree
21	Prevents them from stealing other people's ideas/written conversations and presenting them as their own	3.26	1.94	3.22	1.52	Agree
22	Assists them to avoid copying data from websites, library books and other sources verbatim	3.34	1.92	3.30	1.51	Agree
23	Restricts them from using someone else's images, music, videos and even style of writing in presenting their work without their explicit permission, citation and referencing	3.27	1.94	3.29	1.51	Agree
<b>Aggregate Mean Score</b>		<b>3.24</b>	<b>1.95</b>	<b>3.21</b>	<b>1.52</b>	<b>Agreed</b>

Data on table 2 present the mean scores and standard deviation of male and female Ph.D students on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities. They all agreed on the items in the table with mean scores greater than the mean criterion of 2.50. The aggregate mean scores of 2.86 and 2.79 for male and female Ph.D. students implies that, the items were agreed upon. Therefore, the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities include: enabling one to track the e-Learning contents used all around the Internet, reducing the speed at which Ph.D. candidates copy

someone else's work without citing them properly, helping the candidates to avoid paying external writers to conduct the study for them, preventing them from stealing other people's ideas/written conversations and presenting them as their own, assisting them to avoid copying data from websites, library books and other sources verbatim, and restricting them from using someone else's images, music, videos and even style of writing in presenting their work without their explicit permission, citation and referencing.

**Research Question Three:** What are the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State?

**Table 3:** Mean Scores of respondents on the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State

S/N	Ways of managing anti-plagiarism software for postgraduate students' productivity include:	Male (12)		Female (20)		Decision
		Mean	SD	Mean	SD	
24	Upgrading the anti-plagiarism software with modern research tools/procedures	3.32	1.93	3.31	1.51	Agree
25	Ability to detect the slightest chance of plagiarized content and display percentage reports	3.36	1.92	3.33	1.51	Agree
26	Employing capable hands to operate the anti-plagiarism software in the school	3.50	1.88	3.47	1.49	Agree
27	Ensuring that specialists manage the anti-plagiarism software are employed in the school	3.55	1.87	3.51	1.48	Agree
28	Ensuring that the reports of tested works are deleted from the database every six months to accommodate new ones	3.16	1.95	3.11	1.53	Agree
<b>Aggregate Mean Score</b>		<b>3.38</b>	<b>1.91</b>	<b>3.35</b>	<b>1.51</b>	<b>Agreed</b>

Data on table 3 present the mean scores and standard deviation of male and female Ph.D students on the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State. They all agreed on the items in the table with mean scores greater than the mean criterion of 2.50. The aggregate mean scores of 3.38 and 3.35 for male and female Ph.D. students respectively implies that, the items were

agreed upon. Therefore, the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State include: upgrading the anti-plagiarism software with modern research tools/procedures, ability to detect the slightest chance of plagiarized content and display percentage report, employing capable hands to operate the anti-plagiarism software in the school, ensuring that specialists manage the anti-



plagiarism software are employed in the school, and ensuring that the reports of tested works are deleted from the data-base every six months to accommodate new ones.

#### Test of Hypotheses

**Hypothesis One:** There is no significant difference between the mean scores of male and female Ph.D students in educational administration on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities in Delta State.

**Table 4:** Summary of t-test analysis on the difference between the mean scores of male and female Ph.D students in educational administration on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities in Delta State.

Ph.D students	N	Mean	S.D	df	t-calculated	t-critical	Decision
Male	12	3.24	1.95	30	0.541	±2.00	Accepted
Female	20	3.21	1.52				

Data on table 4 present the summary of t-test analysis on the difference between the mean scores of male and female Ph.D students in educational administration on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities in Delta State. From the calculated t-value of 0.541 which is less than the critical t-value of ±2.00, the null hypothesis was accepted and therefore, not significant at 98 degree of freedom and 0.05 alpha significant level. This implies that, there was no significant difference between the

mean scores of male and female Ph.D students in educational administration on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities in Delta State.

**Hypothesis Two:** There is no significant difference between the mean scores of male and female Ph.D students in educational administration on the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State.

**Table 5:** Summary of t-test analysis on the difference between the mean scores of male and female Ph.D students in educational administration on the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State

Ph.D students	N	Mean	S.D	df	t-calculated	t-critical	Decision
Male	12	3.38	1.91	30	0.252	±2.00	Accepted
Female	20	3.35	1.51				

Data on table 5 present the summary of t-test analysis on the difference between the mean scores of male and female Ph.D students in educational administration on the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State. From the calculated t-value of 0.252 which is less than the critical t-value of ±2.00, the null hypothesis was accepted and therefore, not significant at 98 degree of freedom and 0.05 alpha significant level. This implies that, there was no significant difference between the mean scores of male and female Ph.D students in educational administration on the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State.

The finding revealed that, the types of anti-plagiarism softwares needed in academic institutions for students' productivity in the process of writing research thesis and dissertations include: Grammarly, Whitesmoke, Turnitin, Duplichecker, PlagScan, Quetext, Copyleaks, Viper, WordPress Plugin, Plagium, Copyscape, DMCA Scan, Dustball, Webconf Tool, Plagtracker, Plagiarisma, and Unicheck. These anti-plagiarism softwares are used to ensure that researches carried out by staff and students are not plagiarized by others. Text-matching software (TMS), which is also referred to as "plagiarism detection software" or "anti-plagiarism" software, has become widely available in the form of both commercially available products as well as open-source software. In line with the findings, Nwabueze (2019) indicated the top 11 best plagiarism checker tools to include: Grammarly, Whitesmoke, Duplichecker, Quetext,

#### IV. Discussion of Findings



CopyLeaks, Plagium, Plagiarism Checker, Turnitin, PlagScan, and Plagtracker. These plagiarism tools are very effective in detecting plagiarized works in any educational institution around the world.

The finding also revealed that, the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities include: enabling one to track the e-Learning contents used all around the Internet, reducing the speed at which Ph.D. candidates copy someone else's work without citing them properly, helping the candidates to avoid paying external writers to conduct the study for them, preventing them from stealing other people's ideas/written conversations and presenting them as their own, assisting them to avoid copying data from websites, library books and other sources verbatim, and restricting them from using someone else's images, music, videos and even style of writing in presenting their work without their explicit permission, citation and referencing. The test of hypothesis one showed that, there was no significant difference between the mean scores of male and female Ph.D students in educational administration on the perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing in universities in Delta State. The finding agrees with Uma (2016) that, anti-plagiarism check is very important in improving qualitative research, avoiding duplication of research work, and improving the knowledge of research among students. It is mainly for building better teachers to improve students' writing. Anti-plagiarism tools help to inculcate the habit of respecting the academic integrity and discipline, identify any act of dishonesty in academic work which constitutes academic misconduct, and improve the standards in research.

The finding finally revealed that, the ways of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State include: upgrading the anti-plagiarism software with modern research tools/procedures, ability to detect the slightest chance of plagiarized content and display percentage report, employing capable hands to operate the anti-plagiarism software in the school, ensuring that specialists manage the anti-plagiarism software are employed in the school, and ensuring that the reports of tested works are deleted from the data-base every six months to accommodate new ones. The test of hypothesis two showed that, there was no significant difference between the mean scores of male and female Ph.D students in educational administration on the ways of

managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State. In line with the finding, Uma (2016) is of the view that, proper management of anti-plagiarism software helps editors, authors and researchers prevent misconduct by comparing manuscripts against its database of over 45 billion web pages and 130 million content items, including 38 million works from 530 scholarly publishers.

## V. Conclusion

Plagiarism detection is the process of locating instances of plagiarism within a work or document. The widespread use of computers and the advent of the Internet have made it easier to plagiarize the work of others. Anti-plagiarism software detects the slightest chance of plagiarized content and displays percentage report; has efficient grammar and punctuation checker (you sure can have different tools for this, but having everything in one place is a bonus); proofreader at its best along with free PDF report of all errors (including detected plagiarism) that can be exported. It has the ability to scan document based on document style and type, makes it even more efficient than its competitor plagiarism checkers; and emails weekly performance report (how many words you wrote, improvement in writing style, etc.) which is a good boost to improve one's English. It helps one in preparing an academic essay, thesis or any other assignment.

## VI. Recommendations

Based on the findings, the following recommendations were made.

1. University administrators should employ administrative officers capable of managing anti-plagiarism software for postgraduate students' productivity in Universities in Delta State.
2. The administrative officers should be involved in upgrading the anti-plagiarism software with modern research tools/procedures to enhance proper use of the software for quality output.
3. They should use softwares that have the ability to detect the slightest chance of plagiarized content and display percentage report.
4. University administrators should ensure that the reports of tested works are deleted from the data-base every six months to accommodate new ones.

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### QUESTIONNAIRE

#### Section A: Respondent's Personal Data

Kindly fill the blank spaces and tick (✓) where appropriate.

1. Sex: Male  Female

#### Section B: Questionnaire Items

SD = Strongly agree, A = Agree, D = Disagree, SD = Strongly disagree

S/NO	Questionnaire Items	SA	A	D	SD
Q1	Types of anti-plagiarism softwares for students' productivity include:				
1.	Grammarly				



2.	Whitesmoke				
3.	Turnitin				
4.	Duplichecker				
5.	PlagScan				
6.	Quetext				
7.	Copyleaks				
8.	Viper				
9.	WordPress Plugin				
10.	Plagium				
11.	Copyscape				
12.	DMCA Scan				
13.	Dustball				
14.	Webconf Tool				
15.	Plagtracker				
16.	Plagiarisma				
17.	UniCheck				
<b>Q2</b>	<b>Perceived impacts of anti-plagiarism softwares on the academic productivity of students in thesis writing include:</b>	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>
18.	It enables one to track the e-Learning contents used all around the Internet				
19.	Reduces the speed at which Ph.D. candidates copy someone else's work without citing them properly				
20.	Helps the candidates to avoid paying external writers to conduct the study for them				
21.	Prevents them from stealing other people's ideas/written conversations and presenting them as their own				
22.	Assists them to avoid copying data from websites, library books and other sources verbatim				
23.	Restricts them from using someone else's images, music, videos and even style of writing in presenting their work without their explicit permission, citation and referencing				
<b>Q3</b>	<b>Ways of managing anti-plagiarism software for postgraduate students' productivity include:</b>	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>
24.	Upgrading the anti-plagiarism software with modern research tools/procedures				
25.	Ability to detect the slightest chance of plagiarized content and display percentage reports				
26.	Employing capable hands to operate the anti-plagiarism software in the school				
27.	Ensuring that specialists manage the anti-plagiarism software are employed in the school				
28.	Ensuring that the reports of tested works are deleted from the data-base every six months to accommodate new ones				