



EXTENT OF USAGE OF DOCUMENT INSPECTION AND PROTECTION TECHNOLOGY BY BUSINESS EDUCATORS IN ENSURING THE SECURITY OF DIGITAL DOCUMENTS

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Abstract

This paper aimed to find out the extent of usage of document inspection and protection technology by business educators in ensuring the security of digital documents. Two research questions and two null hypotheses guided the study. The study adopted a descriptive survey design. The population of 41 business educators in tertiary institutions in Ebonyi State, Nigeria was studied without sampling. A structured questionnaire was used. The questionnaire was validated by three experts, two from Business Education Department and one from Measurement and Evaluation, all from Ebonyi State University, Abakaliki. Cronbach Alpha reliability procedure was used. The instrument yielded a reliability coefficient of 0.86. Forty-one (41) duly completed copies of the instrument were administered, retrieved and used for the study. Data collected was analyzed using mean and standard deviation for research questions while the hypotheses were tested at 0.05 level of significance using t-test. The findings of the study found that business educators utilized document inspection and protection technology to ensure the security of digital documents to a low extent. The test of the hypotheses proved that there were no significant differences in the mean responses of the male and female business educators on the extent they utilize document inspection and protection technology to ensure the security of digital documents. Based on the finding of the study, the researcher concluded that the respondents do not adequately utilize document inspection and protection technology to ensure the security of digital documents. Therefore, it was recommended that government and school management should organize continuous training and re-training of ICT programmes (in which document inspection and protection technology is inclusive) for business educators to enable them to update their knowledge so as to embrace digital document security technology skills for effective utilization in ensuring security of digital documents.

Keywords: *Document Inspection, Document Protection, Document Security, Technology, Business Education, Business Educators*

Introduction

Nowadays, it is all about sharing information online and handling digital documents. A digital document refers to an electronic matter that provides information or evidence or that serves an official record. In this regard security of document has to be ensured digitally. Document security is the protection of information contained in documents from unauthorized access or theft. It can also refer to measures taken to prevent the alteration or counterfeiting of documents. Document security refers to various measures to safeguard documents with different tools/technology (Harman 2023; and Malak 2022). In this study, document inspection technology and document protection technology were examined.

Document inspection technology is the central console in Microsoft Word that helps to check document for any information the user wants to keep private. Basu (2015) stated that whenever a document is being created or even edited that some user information gets added to the file automatically. Therefore, a document inspector helps to erase this kind of information before sharing a document. When someone shares an electronic copy of certain Office documents with a client or colleagues, it is a good idea to review the document for hidden data or personal information. Using a document inspector, the owner of the document can remove this hidden information before sharing the document with other people. Hidden information can include hidden data or information that owner might not want to share in Word documents. Word documents can contain the following types of hidden data or personal information: Comments, revision marks from track changes, versions, and ink annotations from reviewers, and changes that were made to document, things that the user might not want to share outside of the document team; document properties and personal information such as e-mail headers, send-for-review information, routing slips, and template names; Headers, footers, watermarks and hidden text (Anyigor-Ogah, 2022).



Savandra (2019) opines that Microsoft Word's document inspector is a built-in feature that can check for and clean out the document, metadata such as comments, embedded revisions, document information (such as an editor's names), and other invisible contents and hidden text. Kim, Linda & Hu (2019) added that a document inspector gives users a way to examine documents for personal or sensitive information, text phrases, or other document contents. They can use the document inspector to remove unwanted information for example, before distributing a document. Manning (2014) stated that the document inspector can be used with word once the document is complete, spell-checked, proofed, saved, and ready to roll electronically. He added that the document inspection is the next step before sending the electronic file such as an e-mail attachment on its way. According to Brownell (2016) before using the document inspector, it is recommended that the user save a copy of the document because the data removed by the document inspector is not always possible to restore by clicking undo. This implies that because some changes may be permanent; it is a good idea to use Save As to create a backup copy of the document before using the document inspecting technology.

Documents protection technology in the other hand is a method of discouraging others from not editing someone's files. By default, anyone with access to a document will be able to open, copy, and edit its content unless owner protects it. Therefore, having written on important or sensitive document in Microsoft Word and wanted to keep it private or at least secure; perhaps wanted to make sure that only the author and certain people can read or edit it; maybe wanted to restrict the types of modifications that someone can make to the document; Perhaps wanted to secure readers of the document that this the is final version. The author can do all that and more if knows which tools to use in word and how to use them (Anyigor-Ogah 2022) Therefore, document inspection and document protection technology are utilized to secure documents in every discipline including business education.

Business education is an educational programmed that embraces basic education for teaching career, entrepreneurship, business understanding, office environment and vocational practices. According to Ezeabii (2017) in Anyigor-Ogah (2023b), Business Education is an aspect of vocational Education which equips individuals with the necessary skills and theoretical knowledge needed for performance in the business world either for job occupations or for self-employment. Business Education is taught and managed by business educators. Business educators are professional trained teachers of business subjects who are competent in teaching the content of business education curriculum in the faculty of education in Universities and Colleges of education. According to Osuala (2004) in Anyigor-Ogah and Okoli (2022), a business educator is any person who plays a critical role in making business education viable and visible in the community, plays the critical role of agent of change in business education, delivers high quality instruction in business education and is able to identify problems facing teaching and learning in the field as well as speculate solutions to such problems. Business educators are in charge of handling examination materials, results, assessment, research work and other institutional documents among others.

Business educators' usage of document inspection and protection technology is a critical step on ways to better document security. The utilization of these technologies is not restricted to any gender. Igboke and Anyigor-Ogah (2021); Anyigor-Ogah (2023a) noted that gender is an attributed quality that differentiates females from males. The difference in technology/technical skills of males and females in business education has been reported by researchers. Igboke and Anyigor-Ogah (2021); Egba, Oko, Egba, Achimugu and Achimugu (2018); Anyigor-Ogah, (2023c), Anyigor-Ogah, (2023d) found that there is no significant difference in the opinion of male and female respondents on the usage of technology in Business education.

In business education, there is an increasing need to be highly skilled in digital skills. This is because; the 21st century word of work is driven by the usage and application of ICT in facilitating job performance. Though, Umezulike and Amaechi (2022); Emeasoba, Akudolu and Agbo (2022) reported low extent usage of technology in business education by business educators. Therefore, this study examined the extent of usage of document inspection and protection technology by business educators to ensure the security of digital documents.



Research Questions

The following research questions guided the study.

1. What is the extent of usage of document inspection technology by business educators to ensure the security of digital documents?
2. What is the extent of usage of document protection technology by business educators to ensure the security of digital documents?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

HO₁: There is no significant difference in the mean responses of the male and female business educators on the extent of usage of document inspection technology to ensure the security of digital documents.

HO₂: There is no significant difference in the mean responses of the male and female business educators on the extent of usage of document protection technology to ensure the security of digital documents.

Methodology

Descriptive survey design was adopted for the study. The area of the study was Ebonyi State comprising three tertiary institutions offering business education namely: Ebonyi State University Abakaliki, Ebonyi State College of Education, Alex Ekwueme Federal University, Ndufu-Alike Ikwo. The population of the study comprised 41 business educators which was made up of 24 male and 17 female in the three institutions: Ebonyi State University 14, Ebonyi State College of Education 14, and Alex Ekwueme Federal University, Ndufu-Alike Ikwo 13. The data for the study was collected using a structured questionnaire. The questionnaire consisted of 25 items according to research questions on a 4-point rating scale of Very High Extent, High Extent, Low Extent and Low Extent. The instrument was validated by three experts; two from business education and one from Measurement and Evaluation, all from Ebonyi State University, (EBSU) Abakaliki. The instrument was also subjected to a reliability test, and yielded reliability co-efficient of 0.86.

Forty one (41) duly completed copies of the instrument were administered, retrieved and used for the study. Mean and standard deviation were used to answer the research questions, while the hypotheses were tested using t- test. Decisions on the research questions were based on the grand mean in relations to the real limits of numbers. Therefore, items with mean ratings of 0.50-1.49 were rated Very Low Extent, those with 1.50 – 2.49 were rated Low Extent, items with mean ratings of 2.50 – 3.49 were rated High Extent and those with 3.50-4.00 were rated Very High Extent. For hypotheses, if the calculated t-value is equal to or greater than the critical t-value, it will be rejected. If otherwise, it will be accepted.

Results

Research Question 1

What is the extent of usage of document inspection technology by business educators to ensure the security of digital documents?

Data collected to answer the above research question are presented in Table 1.



Table 1: Mean Ratings of the Respondents on the Extent of Usage of Document Inspection Technology by Business Educators to Ensure the Security of Digital Documents

S/N	Extent of Usage of Document Inspection Technology to:	X	SD	Decision
1	Erase comments	2.23	0.84	Low Extent
2	Erase revision marks from tracked changed	2.24	0.71	Low Extent
3	Erase document version information	2.28	0.93	Low Extent
4	Erase ink annotation	2.31	0.98	Low Extent
5	Erase e-mail header	2.25	0.97	Low Extent
6	Erase routing slips	2.10	0.88	Low Extent
7	Erase send-for-review information	2.18	0.92	Low Extent
8	Erase document server properties	2.29	0.86	Low Extent
9	Erase document management policy information	2.20	0.99	Low Extent
10	Erase content type information	2.23	0.84	Low Extent
11	Erase user name	2.23	0.84	Low Extent
12	Erase template name	2.21	0.98	Low Extent
13	Erase information in document header	2.28	0.93	Low Extent
14	Erase information in document footer	2.32	0.90	Low Extent
15	Erase watermarks	2.37	1.03	Low Extent
16	Erase hidden text	2.14	0.62	Low Extent
17	Erase custom XML Data	2.19	0.84	Low Extent
18	Erase invisible content	2.13	0.91	Low Extent
Grand Mean		2.23		Low Extent

Sources: Field Work 2023

Table 1 shows that the mean scores on all the 18 items on document inspection technology range between 2.37 – 2.10 which indicate that the respondents utilized document inspection technology to ensure the security of digital documents to a low extent. The cluster had a grand mean score of 2.23 which confirms the results. The standard deviations for all items are within the same range showing that there is homogeneity among responses indicating a greater consensus of opinion.

Research Question 2

What is the extent of usage of document protection technology by business educators to ensure the security of digital documents?

Data collected to answer the above research question are presented in Table 2.

Table 2: Mean Ratings of the Respondents on the Extent of Usage of Document Protection Technology by Business Educators to Ensure the Security of Digital Documents

S/N	Extent of Usage of Document Protection Technology to:	X	SD	Decisions
19	Encryption of document	2.12	0.82	Low Extent
20	Password protection to document	2.21	1.19	Low Extent
21	Restriction on accessing the document	2.14	0.92	Low Extent
22	Dynamic watermarking the document	2.17	0.96	Low Extent
23	Automatic expiry or self- destruct of the document	2.20	0.95	Low Extent
24	Document tracking (of who have viewe d)	1.98	0.86	Low Extent
25	Information rights management of the document	2.06	0.91	Low Extent
Grand Mean		2.12		Low Extent

Sources: Field Work 2023



Table 2 shows that the mean scores on all the 7 items from 19 - 25 on document protection technology range between 2.21 – 1.98 which indicates that the respondents utilized document protection technology to ensure the security of digital documents to a low extent. The cluster had a grand mean score of 2.12 which confirms the results. The standard deviations for all items are within the same range showing that there is homogeneity among responses indicating a greater consensus of opinion.

Test of Hypotheses

HO₁: There is no significant difference in the mean responses of the male and female business educators on the extent of usage of document inspection technology by business educators to ensure security of digital documents.

Data collected to test hypothesis 1 are presented in Table 3.

Table 3: Summary of t-test Analysis of the Mean Responses of the Respondents on the extent of Usage of Document Inspection Technology by Business Educators to Ensure the Security of Digital Documents

Variables	N	X	SD	DF	t-cal	t-crit	Decision	Remark
Male	24	2.08	0.93	39	0.59	2.04	Accept HO	NSD
Female	17	2.09	0.96					

Sources: Field Work 2023

Key: SND: No Significant Difference

Table 3 above reveals t-calculated value of 0.59 and t-critical of 2.04 at 39 degree of freedom. From the table, since the t-calculated is less than the critical t-value, the researcher upholds the null hypothesis and concludes that there is no significant difference in the opinion of the respondents regarding the extent of usage of document inspection technology by business educators to ensure the security of digital documents.

HO₂: There is no significant difference in the mean responses of the male and female business educators on the extent of usage of document protection technology by business educators to ensure the security of digital documents.

Data collected to test hypothesis 1 are presented in Table 4.

Table 4: Summary of t-test Analysis of the Mean Responses of the Respondents on the Extent of Usage of Document Protection Technology by Business Educators to Ensure the Security of Digital Documents

Variables	N	X	SD	DF	t-cal	t-crit	Decision	Remark
Male	24	3.16	0.55	39	0.89	2.04	Accept HO	NSD
Female	17	3.15	0.57					

Sources: Field Work 2023

Key: SND: No Significant Difference

Table 4 above reveals t-calculated value of 0.89 and t-critical of 2.04 at 39 degree of freedom. From the table, since the t-calculated is less than the critical t-value, the researcher upholds the null hypothesis and concludes that there is no significant difference in the opinion of the respondents regarding the extent of usage of document protection technology by business educators to ensure the security of digital documents.



Discussion of Findings

The finding of research question one indicated that the respondents utilized document inspection technology to ensure the security of digital documents to a low extent. The finding of the study corroborates the finding of Umezulike, and Amaechi (2022) who found that business educators utilized digital technology to a low extent. The findings that the respondents utilized document inspection technology to ensure the security of digital documents to a low extent is not surprising to the researcher considering the fact that there are lack of capacity building programmes as well as ICT skills training and re-training for business educators in the study area to update their ICT skills to enhance their professional practice. This, the researcher believed might have contributed to the respondents' low level of usage of document inspection technology to ensure the security of digital documents. The test of hypothesis (H_{O1}) in Table 3 proved that there no significant differences in the mean responses of the male and female business educators on the extent they utilize document inspection technology to ensure the security of digital documents. The finding is in agreement with Igboke and Anyigor-Ogah(2021); and Anyigor-Ogah, (2023c) who found that there was no significant difference in the opinion of male and female respondents on the usage of technology in Business education.

The finding of research question 2 showed that the respondents utilized document protection technology to ensure the security of digital documents to a low extent. The finding is in agreement with Emeasoba, Akudolu and Agbo (2022) who found low extent usage of technology in business education. The test of hypothesis (H_{O2}) in Table 4 proved that there are no significant differences in the mean responses of the male and female business educators on the extent they utilize document protection technology to ensure the security of digital documents. The finding is in agreement with Anyigor-Ogah(2023b); and Egba, Oko, Egba, Achimugu and Achimugu (2018) who found that there were no significant difference in the opinion of male and female respondents on the usage of technology in Business Education.

Conclusions

From the findings of the study, it was discovered that business educators utilize document inspection and protection technology to ensure the security of digital documents to a low extent. Despite the prevalent nature of ICT in virtually every aspect of human endeavors, they have not been widely utilized by business educators in ensuring the security of digital documents. Document inspection and protection technology will not only protect information contained in documents from unauthorized access but can prevent the alteration or counterfeiting of documents. Based on the finding of the study, the researcher concluded that the respondents do not adequately utilize document inspection and protection technology in ensuring the security of digital documents. Also, it was concluded that gender does not significantly affect respondents' mean ratings on the extent of usage of document inspection and protection technology in ensuring the security of digital documents.

Recommendations

Based on the findings of the study, it was recommended:

1. Continuous training and re-training of ICT programmes should be provided for business educators in which document inspection technology skills is inclusive to enable them to update their knowledge in the use of ICT skills for effective utilization in ensuring digital documents security.
2. Government and school management should provide technologies to enable business educators use them to their full potential and advance in knowledge in the utilization of document protection technology in ensuring digital document security.

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