

## Collaborative Writing Tools Used by Librarians

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### Abstract

This work examined collaborative writing tools (CWTs) use by Librarians in Enugu State. The study was guided by five research questions. 208 librarians, registered with the Nigerian Library Association, Enugu State Chapter served as the population of the study. A questionnaire developed by the researchers, based on the research questions, served as the instrument for data collection. Percentages, means and Standard Deviation (STD) were used for data analysis. Findings show that librarians in Enugu State are aware of very few CWTs. Findings also revealed that none of the few tools librarians are aware of is used extensively. The authors concluded that though the respondents are aware of the existence of CWTs, the knowledge is of little or no value since they are not making use of it. The authors recommended that Library Institutions should help create awareness of collaborative writing tools among librarians through professional development programmes amongst others.

**Keywords:** Librarians, Web 2.0, Collaborative writing, collaborative writing tools, Enugu State, Nigeria.

### Introduction

Prior to 1993, Librarians in Nigerian Institutions of higher learning were considered none academic staff. Thus, they had no need for publications. The 1993 Nigerian National Universities Commission (NUC) and Academic Staff Union of Universities (ASUU)'s agreement made Librarians academic staff. Though this agreement was met with much accolade by Librarians, it made scholarly publications mandatory for promotion and academic progress (Onohwakpor & Tiemo, 2006). With this development, Librarians join other professionals in contributing to their profession through writing and publication, and attendance and participation at professional conferences. Moreover, the need to be visible among professional colleagues; and to share experiences, world over made possible by the emergence of information and communication technology forced many librarians to delve into academic publishing.

An observation of major Nigerian Library Journals Online reveals that most of the publications by Nigerian Librarians are done collaboratively. Collaborative writing is the act of two or more people coming together to work on a document. Collaborative writing has been made much easier by the emergency of web 2.0 technologies. Among this web 2.0 technologies are collaborative writing tools

(CWTs). Penn State University (n.d), defined collaborative writing tools (CWTs) as web services that essentially function as online word processors. A CWT generally features intuitively as Graphical User Interface (GUI), basic text and document formatting options. They have the ability to save either to the host's server or the user's local directories. Literature search on use of Web 2.0 among academics reveals that much use is made of CWTs in Europe and America. Nothing to the best of knowledge of the researchers was seen on its use by Nigerians. It is this gap that this work sets out to bridge.

### Objectives of the Study

The general objective of this work is to examine Librarians use of collaborative writing tools in Enugu State, Nigeria. Specifically, the study will:

1. Identify CWTs librarians in Enugu State are aware of.
2. identify other technologies used by Librarians in collaborative writing
3. examine the extent of use of the CWTs by librarians
4. identify the problems encountered by Librarians in using CWTs
5. examine the qualities of CWTs needed by librarians in Enugu State

## **Literature Review**

There are a lot of CWTs which co-authors can use. Morris & Stommel (2014); Schoch (2014) identified Google Docs, Editorially, CommentPress, Etherpad, GitHub, iCloud Pages, Penflip, Draft, Ditt writer, Fidus writer and Gingko. On the other hand, Rethlefsen (2010) listed Google wave, Instant messenger, Chat, Google doc, Zoho writer and wiki. Noel & Robert (2004) observed that CWTs are not much used by authors. Of the 40 people these authors studied, only three people have used collaborative writing tools. These authors further observed that the tools used by the three people include collectio, a web based collaborative tool; MOO's –MUD<sup>2</sup>, Object-Oriented and Collab – a specialized CWT, developed at the University of Denver. Chu & Mak (2009) posit that other social networking web 2.0 technologies such as twitter, face book, MySpace, wikis and blogs can also be used for collaborative writing. They added that such applications are used for exchanging thought and communication via the web with no time or space restrictions

Other technologies apart from social networks, which authors can use for collaborative writing, exist. These include personal word processors like Microsoft word, Corel WordPerfect, xyWrite and WinEdith (Chu & Mak, 2009). Noel & Robert (2004) argue that in collaborative writing, groupware tools (web 2.0 tools) are rarely used. These authors have observed that most collaborators prefer to use their personal word processors. They also add that other ICT tools that can be used for collaborative work include phone, fax and e-mail. In a study carried out at Stockholm University and the Royal Institute of Technology, Kim & Eklundh (2011) observed that CWTs used by the researchers include Ms Word, Frame Maker, Latex and e-mail. Kim & Eklundh further found that none of the researchers in that study had used a specialized CWT. Rather, they discovered that co-authoring practices among the researchers on the net, consist mostly of exchanging emails and sending documents as attachment files in an email system. These observers therefore, opine that, this might be as a result of poor technological and social infrastructure of the network environment. Calvo, O'Rourke, Jones, Yacef & Reiman (2011) have also

observed that though Collaborative writing tools have become part of popular culture, most of the collaborative writing performed in professional context is done using tools such as Microsoft word.

In spite of the existence of several CWTs, very few are regularly used. Noel and Robert (2004) observed that Microsoft word is the word processor most often used by co-authors, followed by Corel, Word Perfect and Star-office. The authors further stated that the only collaborative writing tool used extensively is email. They argue that this may be as a result of the software being easy to distribute copies of the document (and still add comments about any changes) by email. Schoch (2014) asserts that Etherpad is the King of real-time collaboration because it contained features which other tools do not have. These features according to him include privacy in the face of heavy real time editing and concurrent editing.

There are many problems are associated with the use of collaborative writing tools. Lowry, Albrecht, Lee & Nunamaker (2002) have observed some usability problems. Some of these usability problems include lack of some standard word processing features, inconsistent dialogue boxes, lack of multimedia support and lack of advanced editing features. Noel & Robert (2004) also observed that most of these tools allow only single user access to the document at any particular time, offer too many functions that are difficult to understand, unstable internet access while one is working, constant corruption of the word documents and the problem of identifying the correct version of the document in which one is working. Rethlefsen (2010) opined that the shared real – time editing quality of some collaborative tools such as Google waves hinder some people from contributing because of the fear of making mistakes. Brodahl & Hansen have also stated that technical problems frustrate students from using collaborative writing tools. These authors add that in some CWTs that offer synchronous writing, collaborators may be overwhelmed with visual complexity due to the number of people writing at the same time. They further argue that collaborators might experience problems when editing simultaneously and therefore the probability of not producing a unified document at last by

collaborators may occur. Horton, Rogers, Austic & Mc Cormick (1992) envisage difficulties with information overload, duplication of effort, ownership conflict and lack of consensus among members.

Various qualities of CWT have been expounded by different authors. Halfhill cited in Kim & Eklundh (2001) suggests that developers of CWT should consider the requirements of network architecture, such as simplicity in designing and maintenance, accessibility to this application by many users and concurrent control. Kim & Eklundh (2001) further opined that CWT should have good user interface, for sharing documents in networked environment. Kraut, Egidio & Galegher (1988) & Shreiber (2014) posit that CWTs should be technologies that allow free-form of interaction in real-time and time shifted modes. These tools should be able to facilitate both planned and unplanned real time and delayed interactions among collaborators. CWT should not only be capable of making communication cheap, frequent and spontaneous enough for collaborators to be in touch easily, but must also permit informal and unplanned interactions as well. These authors further argue that the tools should also have markdown support (i.e. HTML conversion capability), notifications, file management, import and export capabilities. Lowry, Albrecht, Lee & Nunamaker (2002) explained that CWT should have graphical status bar that had iconic representations. These authors suggest that it will be useful to add a feature that allows participants to see the changes that have been made since they last logged in.

### Research Methodology

The study is a descriptive survey. The Area of study is Enugu State. Enugu State is in the South East geo-political zone of Nigeria. There are many libraries in Enugu State. These include Four University libraries, Three Polytechnic libraries, two colleges of Education libraries, one research institute library, one national library and one state library with two branches. The population of the study is 208 librarians registered with the Nigerian Library Association, Enugu State Branch. : There was no sampling. The whole population was used because it is a manageable

number of people.(Anaekwe,2007). A questionnaire titled “Collaborative Writing Tools used by Librarians” was used for data collection. The questionnaire was developed by the researchers based on the objectives of the study. The questionnaire was made up of three parts; A, B and C. Part A was used to elicit demographic information of the respondents. Part B was used to determine if the respondents have been involved in collaborative writing while part C was based on the objectives of the study. Respondents who have never been involved in collaborative writing were advised not to respond to part C section of the questionnaire. Part C was made up of five clusters. Each cluster represents a specific objective of the study. Cluster 1 (one) was on available , not available bases while the rest was based on a four point scale namely: Strongly Agree (SD) Agree (A) Disagree (D) and Strongly Disagree (SD) or Very High Extent (VHE), High Extent (HE),Low Extent (LE), Very Low Extent (VLE). The questionnaire was validated by three academic staff of the department of Library and Information Science, University of Nigeria Nsukka. Their observations, ideas and opinions were incorporated in the questionnaire. The validated questionnaire was then used for trial test on 18 Librarians drawn from Nnamdi Azikiwe University, Awka and Anambra State Library Board , Awka. The trial test was computed by Cronbach’s alpha method of internal consistency and reliability. The reliability coefficient was 0.76 which showed that the instrument is highly reliable. Copies of the questionnaire were administered personally to the respondents by the researchers. A total of 185 copies of the questionnaire were administered while 149copies (80.5%) were retrieved. The data collected were analyzed using percentages and mean scores. Percentages of 50 and above were considered as what the respondents agreed on. Likewise, mean scores of 1 – 1.4 is considered Strongly Disagree (SD) or Very Low Extent (VLE), 1.5 – 2.4 is considered Disagree (D) or low Extent, 2.5 – 2.9 is considered Agreed (A) or High extent (HE), 3.0 and above is considered Strongly Agree (SD) or Very High Extent (VHE).

**Results**

**Part A. Characteristics of the Respondents.**

Analysis of data on the demography of the respondents show that 54% (81) are from University Libraries, 11% (17) from Polytechnic Libraries, 4% (5) from Monotechnic Libraries, 9% (13) from College of Education Libraries, another 8% (12) from Research Libraries and 14% (21) from Public Libraries.

Also, based on the ages of the respondents, 42 or (28%) of the respondents are within the age bracket of 24-34years; 51 or (34%) are within 35-44 years of age, 34 or (23%) are within 45-54 age bracket while 22 or (15%) are within 55-64 years of age. No librarian in the study is above 64 years.

Among the respondents, 44% (66) are male while 56% (83) are females.

Furthermore, 7% (11) of the respondents have Ordinary National Diploma (OND), 5% (8) have Higher National Diploma (HND), 6% (9) have Post Graduate Diploma in Library and information Science (PGDL), 22% (33) have Bachelor of Library and Information Science (BLS), 41% (61) have Masters Degree in Library and Information Science (MLS), and 16% (24) have Doctor of Philosophy Degree in Library and Information Science (PhD).

In terms of job experience, 21% (31) have worked between 0-5years, 19% (29) worked between 6-10years, 26% (39) have worked

between 11-15 years, 21% (31) worked between 16-20 years while 13%(19) have worked for 21 years and above.

**Part B. Collaborative work done by the respondents.**

Analyses of the results show that 23 respondents out of the 149 retrieved copies of the questionnaire have never been involved in collaborative writing. Further analysis show that majority of these respondents (19) are from public libraries while the rest are from University Libraries (2), Polytechnic Libraries 1, and College Library 1. All the four people from Universities, Polytechnic and college libraries that have not been involved in collaborative writing are new employees who have been in the work between 0-5years. Analysis of the result also showed that collaborative writing involving two people only is more common among librarians in Enugu State, Nigeria. From the result obtained, 83 (65.8%) people out of the 126 people that have been involved in collaborative writing, have been involved in collaborative writing involving only two people, 32 people (25.3%) in collaborative writing involving 3-4 people and 11 (8.7) in collaborative writing involving 5 or more people.

**Part C.** (Analysis is based on the responses of 126 respondents who have been involved in collaborative writing).

**Table 1. Collaborative Writing Tools (Web 2.0) Librarians are aware of.**

S/n	Collaborative Writing Tools (CWT)	Yes	%	Rank	No	%
1	Chat	96	76.4	3rd	30	23.8
2	Wiki	96	76.4	3rd	30	23.8
3	Google Docs	102	81.1	2nd	24	18.9
4	Twitter	92	73.6	4th	34	26.9
5	Face book	108	85.5	1st	18	14.2
6	CommentPress	32	25.0	11th	94	75.0
7	Zoho writer	17	13.7	15th	109	86.3
8	Editorially	28	22.2	12th	98	77.8
9	Etherpad	10	8.2	20th	116	91.8
10	Myspace	49	38.9	8th	77	61.1
11	GitHub	33	18.4	13th	103	81.6
12	Blog	76	60	5th	50	40
13	iCloud Pages	40	31.6	10th	86	68.4
14	PenFlip	18	13.7	15th	108	86.3
15	Draft	44	35.2	9th	82	64.8
16	Gingko	14	10.9	18th	112	89.1
17	Google wave	55	44.4	6th	71	55.6
18	Instant messenger	50	40	7th	76	60
19	Ditt writer	23	18.2	14th	103	81.8
20	Fidus writer	12	9.6	19th	114	90.4
21	Collectio	15	12.2	16th	111	87.8
22	MOO <sup>2</sup>	11	10	19th	115	90
23	Collab	15	11.8	17th	111	88.2

**Table 2.** Technologies which Librarians in Enugu State may prefer to Use in place of Collaborative Writing tools..

S/n	ICT tools	Mean	Std	Rank	Decision
24	Microsoft word	3.4	.668	1st	SA
25	Corel	2.7	.738	3rd	A
26	Xywrite	2.4	.760	5th	D
27	WinEdith	2.3	1.000	6th	D
28	Phone	3.0	.497	2nd	SA
29	Fax	2.6	.488	4th	A
30	Frame maker	2.4	.825	5th	D
31	Latex	2.4	.952	5th	D

**Table 3. Extent of use of Collaborative Writing Tools by Librarians.**

S/n	Collaborative Writing Tools (CWT)	Mean	Std	Rank	Decision
32	Chat	2.5	1.161	3rd	High extent (HE)
33	Wiki	2.4	.415	4th	Low Extent (LE)
34	Google Docs	2.8	.497	1st	High extent (HE)
35	twitter	2.2	.820	5th	Low Extent (LE)
36	Face book	2.7	.1.015	2nd	High extent (HE)
37	CommentPress	1.7	.497	8th	Low extent (HE)
38	Zoho writer	1.5	.976	10th	Low extent (HE)
39	Editorially	1.5	.470	10th	Low extent (HE)
40	Etherpad	1.4	.708	11th	Very low extent (VLE)
41	Myspace	1.6	.497	9th	Low extent (HE)
42	GitHub	1.4	.498	11th	Very low extent (VLE)
43	Blog	2.1	1.443	6th	Low extent (HE)
44	iCloud Pages	1.7	.987	7th	Low extent (HE)
45	PenFlip	1.4	.847	10th	Very low extent (VLE)
46	Draft	1.6	.830	8th	Low extent (HE)
47	Gingko	1.4	.759	11th	Very low extent (VLE)
48	Google wave	2.0	.415	7th	Low extent (HE)
49	Instant messenger	2.1	1.117	6th	Low extent (HE)
50	Ditt writer	1.4	1.117	11th	Very low extent (VLE)
51	Fidus writer	1.5	.488	10th	Low extent (HE)
52	Collectio	1.4	.759	10th	Very low extent (VLE)
53	MOO <sup>2</sup>	1.3	.371	12th	Very low extent (VLE)
54	Collab	1.4	.721	11th	Very low extent (VLE)

Table 1 shows that librarians in Enugu State are aware of only six collaborative writing tools out of twenty-three listed above. These are Chat 76%, Wiki 76%, Google Docs 81.1%, twitter 73.6%, face book 85.5% and Blog 60%.The table also show that face book is the highest collaborative writing tool known by Librarians in Enugu State.

Table 2 shows that Librarians in Enugu State strongly agree that they will prefer to use other technologies like Microsoft word and phone for collaborative writing instead of using collaborative writing tools. Other preferred

technologies on the list, for collaborative work are Corel and Fax. The high standard deviation score in item 27 (WinEdith) show that there are divergent views on that item.

Table 3 shows that among all the listed Collaborative writing tools, only chat, Google Docs and Face book (items 32, 34 and 66) are used in high extent by librarians in Enugu State. Others such as items 33,35,37,38,39,42,43,44,46,48,49, and 51) are of low extent use while items 40,41,45,47,50,52,53,, and 54 are of very low extent use.

**Table 4. Problems Librarians encounter in using Collaborative Writing Tools**

S/N	Problems Librarians encounter in using collaborative tools	Mean	Std	Rank	Decision
55	Lack of standard word processing features	2.7	.803	6th	A
56	Inconsistent dialogue boxes	2.9	.754	4th	A
57	Lack of multimedia support	2.9	.754	4th	A
58	Lack of advance editing features	3.4	.321	1st	SA
59	Single user access to the document at a particular time	2.8	.675	5th	A
60	It has many functions that are difficult to comprehend	2.9	.458	4th	A
61	There is the problem of identifying the right version of the document one is working on	2.8	.556	5th	A
62	Unstable internet connectivity	3.3	.464	2nd	SA
63	Inability of collaborators to produce a unified document at last	2.9	1.211	4th	A
64	Ownership conflict	2.9	1.265	4th	A
65	Lack of consensus among collaborators	2.9	.953	4th	A
66	Information overload	3.0	1.286	3rd	SA
67	Duplication of effort	2.7	.805	6th	A

**Table 5. Qualities of Good Collaborative Writing Tools needed by Librarians**

S/n	Qualities of a good collaborative writing tool.	Mean	Std	Rank	Decision
68	Accessibility to many users at the same time	1.6	.789	4th	D
69	Good user interface	3.3	.885	1st	SA
70	Ability to work both online and offline.	3.3	.726	1st	SA
71	It should be cheap	3.2	.991	2nd	SA
72	Ability to facilitate both planned and unplanned interaction	2.9	1.224	3rd	A
73	Should have markdown capability	3.3	1.269	1st	SA
74	Should have graphical status bar	3.2	1.316	1st	SA
75	Should have features that allow collaborators to see new changes to the document	3.3	.971	1st	SA

Table 4 shows that all the listed items are problems that are encountered by librarians while using collaborative writing tools. Although, all the items are problems to librarians, Items 58, 62 and 66 with mean scores above 2.9 can be said to constitute greater problems to librarians. The low standard deviation scores for the three items 58, 62 and 66 show that majority of librarians share these views.

Table 5 shows that the respondents strongly agreed that items 69, 70, 71, 73, 74, and 75 are qualities of collaborative writing tools needed by librarians. The respondents also agreed that item 72, is a quality of collaborative writing tool required by librarians while the respondents disagree with item 68, as a quality of a collaborative writing tool. It should be noted that though items 73 and 74 carry the decision of strongly agree, the high standard deviation score of both items shows that there are divergent opinions in those items.

### Discussion

The findings of this study on the extent of use of collaborative writing tools (CWTs) by

librarians in Enugu State in Nigeria indicate that librarians are only aware of the existence of very few of these tools. This finding is consistent with the finding of Noel & Robert (2004) in which he observed that CWTs are not much used by authors. More so, the few popular CWTs known to Librarians in Enugu State are Chat, Wiki, face book, blog, twitter and Google waves. Apart from Google waves, none of the other collaborative tools known by these librarians is a group ware. Rather, they fall into a group of CWT which Chu & Mak (2009) classified as other social networking web 2.0 technologies, which may also be used for collaborative writing.

Findings from the study also revealed that none of the collaborative tools is extensively used by librarians. Further findings from the study revealed that there are other technological tools which librarians may prefer to use instead of CWTs. These technologies include word processors like Microsoft word, corel, phone and fax. This is consistent with the findings of Calvo, O'Rourke, Jones, Yacef & Reiman (2011) in which the authors discovered that though, CWTs have become part of popular

culture, most of the collaborative writing(s) performed in professional context, is done using tools such as Microsoft word. Kim & Eklundh (2011) attributed this to poor technological and social infrastructure of the network environment. The researchers will like to argue that it is not only poor technological and social infrastructure of the network environment, that result in poor usage of CWTs by librarians, but also, lack of skill on the use of the technology and inability of librarians to network with colleagues in other places in order to learn from each other. Use of Fax by librarians in the face of newer technologies like Scan machines is purely evidence of poor technological and social infrastructure of the network environment.

The study also indicates that librarians in Enugu State encounter a lot of problems in using CWTs. Chief among these problems are lack of advanced editing features, unstable internet connectivity and information overload. As shown by literature review, Lowry, Albrecht, Lee, and Nunamaker, (2002); Noel & Robert (2004); Brodahl & Hansen (2014 ) and Austic & Horton, Rogers, Austin, McCormick (1992); these problems are not only peculiar to librarians in Enugu State. However, much of these problems will be reduced by increased used and mastery of the software.

It is interesting to note that Librarians in Enugu State do not consider accessibility of the document to many users at a time as a quality needed in a CWT. This finding contradicts the part of the findings of Halfhill cited in Kim & Eklundh (2001) which suggests that developers of collaborative writing tools should consider requirement of accessibility to the application by many users at a time. Other qualities of a CWT accepted by the respondents are consistent with the findings of Kraut, Egidio & Galegher (1988); & Shreiber (2014) who suggest that CWTs should be technologies that have the following: allow free form of interaction in real-time and time shifted modes, ability to facilitate both planned and unplanned real time and delayed interactions among collaborators, capable of making communication cheap, frequent and spontaneous enough that collaborators can be in touch easily; and must permit informal and unplanned interactions as well. The tools should also have markdown support (i.e.

HTML conversion capability), notifications, file management, import and export capabilities. The ability to work both offline and online required in a CWT by the Librarians may not be unconnected to poor network connectivity problem being experienced in many developing nations.

### Conclusion

Librarians in Enugu State are aware of very few CWTs. The use of these tools amongst them is very minimal too. Many of the librarians will even prefer to use other technologies like word processors, Corel or phone for collaborative writing instead of CWTs. Librarians encounter many problems while using collaborative writing tool. Many of these problems may likely ease off with continuous use of the tool. Also, many qualities are expected in a CWT, these include markdown capability and good user interface amongst others.

**Implication to practice:** Librarians should be encouraged through in-house training workshops to learn how to use CWTs and other modern information communication technologies (ICT), otherwise they will continue using outdated and more laborious technologies.

**Implication to policy:** Library institutions should make it a policy with a time frame that every librarian should embrace emerging technologies within a short time of within six months of the introduction of the technology. With such a policy, librarians will be forced to be ahead of technology which is very vital to their duties as information providers.

Based on the findings of this study, the researchers will like to recommend as follows:

1. Library Institutions should make it a duty to send their librarians on professional development programs to learn about new technologies as they emerge, (of which the skill to use CWT is one)
2. Networking should be encouraged among librarians. Through such networking and collaboration librarians will learn from each other.
3. Librarians should be encouraged to imbibe the spirit of team work. Spirit of team work is necessary for successful accomplishment of collaborative works.

4. Library institutions in liaison with software producing companies should endeavor to manufacture special collaborative writing tools for librarians, bearing in mind all the recommended qualities of collaborative writing tool required by librarians.

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