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Research Paper

The Progress of Digital Technologies in Solving Chronic Education Challenges: The Case of Citation and Referencing Errors

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ABSTRACT

Education sector has embraced and increasingly use digital technologies to address its longstanding challenges. However, considering that every technology has its limitations, I evaluated the progress of citation and reference technologies in solving the chronic problem of plagiarism in academic writing. In this pursuit, I confirmed with several technologies for citation and referencing exist. The technologies still face several challenges but have overall demonstrated good progress and bright prospect. Contrarily, academics increasingly disregard abiding by citation manuals, which might render the technologies fruitless. I therefore call the academic community to rejuvenate ethics among academics to abide by principles of academic writing, and to take full advantage of the available technologies in this endeavor. I equally recommend the simplification of the existing citation guidelines to make them memorable and user-friendly.

Keywords: *Plagiarism, Citation, Citation software, Referencing, Digital technologies and education*

Mitigation of digital technologies against education challenges

Since the debut of digital technologies, people from different backgrounds use them to learn different things. People of different ages play thought-provoking video games, workers are interacting using technologies, students take online courses and many more people consult Wikipedia or Google for answers to their problems (Collins & Halverson, 2009,). Lane (2009, p. 7) writes, "digital technologies are changing the ability to produce and share graphical representations such that they are becoming a serious area of research and activity (despite the practice being hampered by no agreed grammar for such outputs). Similarly, video use has been even more influenced by digital technology so that the skills of producing and interpreting such outputs are more widespread and more familiar than ever." Digital technologies also render open data for research, simplify the task of publishing academic works and integrating academics and publics through easy means of communication and sharing resources (Anderson, 2013, p. 53).

Distance and open learning institutions are leading in embracing digital transformations in their teaching and learning activities. They use online modes of education as sole mode of education delivery or as a complement to the traditional correspondence. They also use emails or social media such as WhatsApp, Facebook, digital libraries, Wikipedia, Moodle and so many more to correspond with their stakeholders.

Indeed some information technologies available today have greatly solved or rather relieved problems that have been facing the provision of quality affordable education for a long time. Peters (2000), for instance, observes that digital learning environment can considerably intensify the iconic method of dealing with reality using multimedia systems. He adds that "teaching software can diagnose what previous knowledge is already present, students can be motivated and counselled, and different learning paths can be provided, offered and used" (Peters, 2000, p. 8). Likewise, Lane (2009) maintains that digital technology render open content, open licences, open formats, and open software, which is a solution to some of the barriers, which have been facing the access to education.

However, as it is the case with everything, digital technologies have also their pitfalls in dealing with current education challenges. Weller, & Anderson (2013, p. 1) write, "higher education institutions face a number of opportunities and challenges as the result of the digital revolution". Peters (2000) observes, for example, that interactive skills that were being natured through group assignments and organisation of different class activities in traditional method of learning is unmatched in digital learning methods that many institutions have so embraced. Lane (2009), on his part, observes that cost of access of digital technologies for learning bring about inequity among different social groups.

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In light of these positive and negative impacts of digital technologies, I took academic responsibility to explore Peters' (2000, p. 1) question: "are the dramatic innovations a menace to established ways of learning and teaching or are they the panacea to overcome some of the difficulties of our system of higher learning and to solve some of our educational problems caused by the big and far-reaching educational paradigm shift?"

In attempt to answer this question, I evaluated the achievement of citation technologies in solving the problem of plagiarism, which has been facing academic writing for over one hundred and sixty year. The analysis is based on observation and experience I have as a lecturer at different higher education institutions regarding plagiarism and referencing errors among academics. The paper also relies on secondary materials on the phenomenon by other researchers and academics. I use figures for illustrating points and literature for discussing some findings. With regard to scope, I mainly focused on the technical aspects of citation and referencing, because it is an area that can readily be remedied by abidance by standard citation guidelines. That is, I did not focus on the relevance of references, correctness of publications cited, validity of sources cited or misrepresentations of content of publications in texts. Further, I did not assess the success of plagiarism software such as Turnitin, Grammarly, WhiteSmoke, Duplicheker, Viper and so forth.

The significance of proper citation and referencing in academic works

Proper citation and referencing comes on the backdrop of plagiarism problem, which is considered a serious misconduct in academics (Maurer, Kappe, & Zaka, 2006, p. 1052). In underlining the importance of avoiding plagiarism through correct citation and referencing, Merten & Baethge, (2011, p.550) write, "scientific statements have to be supported by evidence. A reference citation is supposed to provide accurate underpinning for a statement and to represent the current state of research, or, in the case of a maverick opinion, to ensure it is recognizable as such." Harzing (2002, p.127) strongly comments, "inappropriate references undermine scholarship and its credibility." Correct referencing is said to help, in among other things, the identification of an article of interest for a reader who is interested in learning more about the topic in question (Asano, et al, 1995). "Referencing is essential because it places a study within a broader context and compares it with other studies within the same subject area. In addition, it shows the extent of previous research consulted and used in a study. Furthermore, in academic writing, referencing helps to ensure honesty, thereby, differentiating a given study from other studies" (Nzekwe-Excel, 2019, # 1). Asano, et al. add that it is very frustrating to a reader if they cannot identify the referred article simply because of inaccurate reference. In recognition of the importance of proper documentation of academic sources, the academic community developed citation and referencing conventions to ensure that authors acknowledge sources they use and treat ideas they use fairly and honestly. According to Sweetland (1989, 291), the first guidelines in this direction were developed as long back as in the middle of the nineteenth century. As of today, famous citation and referencing principles out there include Modern Language Association (MLA), Chicago Manual of Style, or American Psychological Association (APA), Harvard Referencing Style, and Vancouver Referencing Style, just to mention a few. Unfortunately, the existence of these guidelines has not fully solved the problem they were intended for. Every time in history, complaints about the neglect of citation and referencing standards in academic works have continued to exist. I detail the trend of the problem in the subsequent section hereunder.

The chronic problem of wrong citation and referencing

Wrong citation and referencing have been a challenge in academic writing for a very long time. According to Sweetland (1989, p.293), the first comprehensive complaint about inaccurate citations was reported in 1859 by Aristide Verneuil among surgeons and scholars. He adds that the complaint led to the publication of the first citation guidelines in 1893. Despite the fact that one hundred and six years have elapsed since the first publication of this first citation guideline, the problem of wrong citations and referencing have continued to exist. Gosling, et al. (2004, p. 36) who observed quotation accuracy in four journals in 2004 found out 69 (12.3%) quotation errors across all journals they studied. In the same vein, Mertens & Baethge (2002) who studied publications in Deutsches Ärzteblatt reported a rate of around 20%; but cautioned that the number might be a conservative estimate considering that they only checked whether the statement agreed with the source. Similarly, Mertens, & Baethge (2011, p.551) who tracked citation and referencing errors in documents spanning fourteen years, for example, reported that "the error rate appears to have remained steady from 1977, when the first studies were published, up until 2011". Evans Nadjari and Burchell who researched on the chronic problem of citation in 1990 concluded that authors and reviewers rarely check references in works they deal with (Evans, Nadjari, & Burchell, 1990). Additionally, in 1995, Harzing scrutinized publications on high Expatriate Failure Rate (EFR) using the terms of references such as the relevance of the references, correctness of the publications cited, the validity of the source cited and misrepresentation of the content or ascription of

information to a wrong publication. He eventually found that many scholars committed these errors, which led to misinformation among the academic community. In a similar study, Mertens & Baethge (2011) studied and found inaccuracy in references in the aspect of mismatch between the reported information and the argument at hand; the ambiguity of the information used to support an argument, and the incompleteness of bibliographic data (authors, title, volume number, page numbers, or journal title) and or wrong citations. Furthermore, Liang, Zhong and Rousseau studied what they termed as referencing misbehavior in publications in Thomson Reuter's Web of Science (WoS) from 16th December 2012 to 20th December 2012. They examined as to whether the author cited a paper and copied its reference; copied a reference from another paper without citing it; or copied references from own publications without rechecking the accuracy of the reference in question. They concluded that authors wrongly cited names of authors, page numbers and titles of publications (Liang, Zhong, & Rousseau, 2014). Basak (2016) who studied the accuracy of citations and referencing in the Journal of Computer Science Engineering volume 7 from issue number 1 to 12 found that the trend of making incorrect citations and referencing fluctuated among the issues. Overall, errors in citing sources and referencing are common and have continued to exist in many academic works. In this light, some experts have innovated technologies, which try to mitigate against the problem. I survey some existing technologies for proper recording of academic sources. I further evaluate the strengths and weaknesses of these technologies to project their prospect in solving the problem in question. The subsequent subsections identify some of the technologies and show how they work.

Digital technologies intervention in the chronic challenge of wrong referencing

Several digital technologies have been developed to help with citation and referencing accuracy. Computer companies, for instance, build citation and referencing tools in their text processors (e.g. Microsoft Word or LibreOffice). Besides, there are several stand-alone software intended to help with citing and referencing sources properly. Some of these are such as Citavi, Endnote, Mendeley, Zotero, ReferenceManager, ProCite, BibTex and Perrla, just to mention a few (Ochieng and Dheskali, 2010). Some of these software are free, whereas, others need subscription to use. Similarly, some of them are online software, whereas, others can be used offline.

Apart from the inbuilt and freestanding citation software, large academic databases such as Google Scholar, Scopus and Academia.edu, just to mention a few, generate ready-made citation recommendations of sources therein. That is, academics who happen to access sources in these databases can simply copy a ready-arranged reference from the database and paste it into their works in a reference style they want i.e. APA, MLA, Chicago, Harvard or Vancouver. Figure one illustrates how Google Scholar's technology creates ready-made references to copy and paste on one's work.

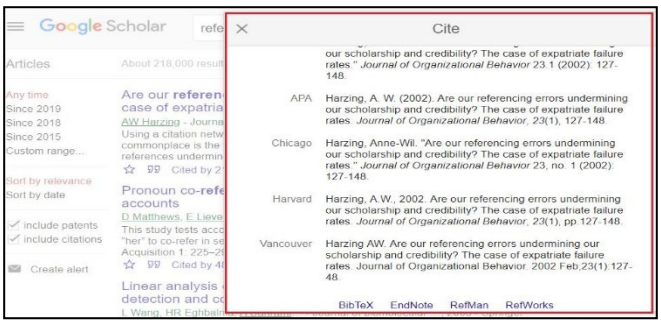


Figure 1. Ready to use references from Google Scholar for Harzing (2012)
Source:
https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=referencing+errors&btnG=#d=gs_cit&u=%2Fscholar%3Fq%3Dinfo%3AP6KP6dONdk8J%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Den

As Figure 1 illustrates, users can also send citations and references from these databases to other standalone software such as BibTex, EndNote, RefMan and RefWorks. In so doing, the technology saves researchers a lot of time they would have used to follow the details of citations in citation manuals. Likewise, it helps them to make citations and to present reference lists that match the expectations of the academic community. In the subsequent sections, I assess the progress made by these technologies in enhancing citation and referencing in academic works and challenges they still face.

The progress of digital technologies in enhancing citation and referencing

Opinion is divided on the success of various software and digital techniques intended to enhance proper documentation of sources. On the one hand, some scholars are quite optimistic that the existing digital technologies are doing a fantastic work in solving this longstanding problem of wrong citations and references in academic works. In demonstrating the effectiveness of digital technologies in addressing referencing errors, Asano, Mikawa, Nishina, Maekawa, & Obara (1995), for example, report a case where reference errors were very high in papers submitted to the Canadian Journal of Anaesthasia for publication consideration before the year 1994. As a measure, the journal imposed that authors should scan first pages of their reference lists and send them to editors to check the accuracy before submitting the full work to the journal for publication consideration. In their study which was conducted in 1995 (a year after the introduction of the technology),

they established that that the measure indeed improved the accuracy in the titles of the references, volume number, page numbers, and year of publication in the reference lists of papers submitted to the journal. They however observed that the measure did not alleviate errors in author field and mechanics of reference list. Rakhshan (2012, p. 158) also experienced that "computer software can fetch accurate citation data from the official websites, insert them into a database without errors, and allow for their batch-editing as required." O'Connor, et al. (2013) equally observed that electronic databases and dedicated bibliographical software reduced citation and reference errors in 2013 compared to ten years before 2013. In the same vein, Liang, Zhong, & Rousseau (2014) say that software such as RefWorks, EndNote, BibTeX or Zotero reduce the probability of self-copying errors, and simplify the work of referencing for researchers. Basak (2016, p. 109) is of the view that software tools such as EndNote, Mendeley or RefWorks can easily alleviate errors and omissions if used for citations and referencing.

Contrarily, some scholars have observed that technologies have not fully addressed the problem of inaccurate citation and referencing in academic works. Rakhshan (2012, p. 158) who considered citation software flawless in the introductory page of his article, for example, ended up highlighting strengths and weaknesses of each software he evaluated in that work. Correspondingly, Hensley (2011) who compared RefWorks, EndNote, Zotero and Mendeley, at his capacity as a librarian, uncovered that none of the software was one hundred percent perfect in rendering citation and reference list. Indeed his focus was affordability, function and navigation aspect of the software, but I add that even the quality of the outputs of the products is not yet impressive.

In researcher's experience, in-built Microsoft Word reference tool, for instance, fails to make beginning-of-sentence citations per the rules of APA citation guidelines. I for instance uncovered that the tool has been designed to enclose author's name and the year of publication in the parenthesis all the time. For example, it will always insert citations that looks like "(Kalokola, 2012)" – the format which works well with end-of-sentence citations, not the beginning-of-sentence citations. According to APA citation style, beginning-of-sentence citations, require introductory words such as "according to Stans (2019)" , or "In Stans' (2019) views"; or metalanguae such as "Stans (2019) says". One notes that in all these modes of beginning-of-sentence citations, the author' surname occurs outside the paranthesis, meanwhile, the year of pulbication occurs inside the paranthesis, which the in-built Microsoft Word citation tool does not support. In using this tool therefore, an author has to all the time make end-of-sentence citations – which is quite boring, unprofessional and less artistic. I illustrate how to insert sources using this tool in Figure 2.

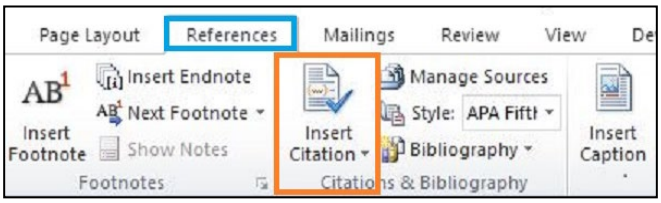


Figure 2. Microsoft Word window showing an inbuilt citation tool

Similarly, while Microsoft Word inbuilt citation tool is quite capable of arranging elements of a reference list correctly, it does not handle sources such as unpublished theses and dissertations. Moreover, I note that it is semi-automatic; in the sense that the precision of its output is dependent on users' input. That is, if a user does not know the difference between volume and edition for example, he or she will feed the tool with wrong information, which will lead to wrong output. I illustrate this point with a self generated reference list by Microsoft Word tool in Figure 3.



Figure 3. Error of face and letter case in a reference list by Microsoft Word inbuilt reference tool

The reference list in Figure 3 is complete in terms of elements and perfect in terms of the order of reference elements and the use of punctuation marks. However, one notes that the face and font of the reference list are different from the rest of texts in this document. Moreover, whereas, APA 5th edition, for example, requires that all keywords in the title be written in small letters – except the first word and proper nouns – in this reference list generated by Microsoft Word reference tool, all keywords start with capital letters – which is incorrect. The interpretation is that the user who fed the data into the tool did not follow the letter case principle in feeding the data into the tool. As a result, the tool returned wrong output from wrong input. The whole argument here is that these citation software are still semi-automatic. In this regard, the user must first know the ABCs of the reference style they are using to be able to generate correct results.

Further, while Asano, et al. (1995) found out that compulsory scanning of the first page of reference list before submission of a paper to the Canadian Journal of Anaesthesia reduced errors, they later realized that the solution was restricted only to the journal and was therefore not transferable to other journals. This is evident in their report that reads, "we conducted a similar study on Anaesthesia and Analgesia and British Journal of Anaesthesia. In these journals, which did not

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change editorial policy after McLellan's report, the rates of citation errors did not decrease (from 36% to 38% in "Anesth Analg" and from 47% to 36% in "Br J Anaesth', $p > 0.05$)" (Asano, et al. 1995, p. 372). This is to say, the measure was only beneficial to the Canadian Journal of Anaesthasia, not the academic field as a whole. The finding however taught us a lesson that gatekeepers of academics can alleviate the problem of wrong citations and reference list with stringent rules (editors and reviewers). Nevertheless, the stringent rules as a means to ensure proper documentation of sources is taxing academic supervisors and therefore unsustainable. I am hence of the view that academics should be made to love the practice of documenting sources in their works properly without cohesion by any external forces such as reviewers, editors and examiners. As of now, it appears that many scholars seem to consider abidance by these principles a trivial matter, not worth their time and commitment. Sweetland (1989, p. 300) puts it that "the perpetuation of gross inaccuracies suggests that the role of citations is not taken very seriously by the scientific community".

With regard to citations rendered by databases, great care is needed to achieve accuracy in academic works with these references. Google Scholar, for example allows users to copy references therein, paste them into their works – which is timesaving, and stress alleviating act. However, I have noted, for example, that some of the ready-made citations in this database are non-compliant with some citation stipulations in guidelines such as APA, Chicago, MLA or Vancouver. I note that some references recommended in these databases lack some of the required standard elements of the reference list, have wrong cases in titles/names of journals, have italics on wrong elements, lack page numbers, lack edition, volume numbers and so forth. I sample shortcomings of these ready-made citations from Google Scholar in Figure 4.

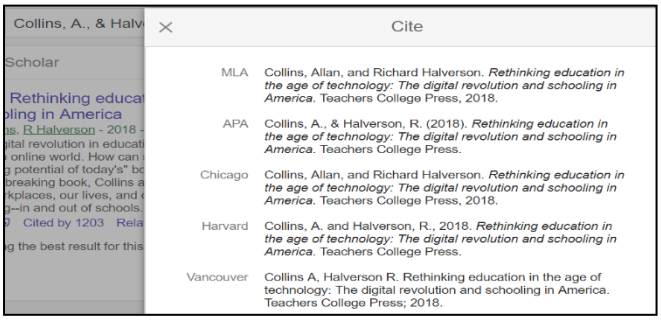


Figure 4. Google Scholar's citation instruction for Collins and Halverson (2009)

Source:
https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=Collins%2C+A.%2C+%26+Halverson%2C+R.+%282018%29.Rethinking+education+in+the+age+of+technology%3A+The+digital+revolution+and+schooling+in+America.+Teachers+College+Press&btnG=#d=gs_cit&u=%2Fscholar%3Fq%3Dinfo%3AxhJpSOHofMYJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Den

In the above citation recommendation given by Google Scholar for "Collins and Halverson, 2009", one discovers that the city of publication is absent in all the five styles suggested – which is a serious referencing error according to all the famous existing citation guidelines. In the researcher's search, he discovered that the city is San Francisco. Similarly, the publisher is given as "Teachers College Press", whereas, the real publisher of the book is "John Wiley and Sons". In addition, even the title recommended in Google Scholars differs from the actual title of the book. Likewise, whereas, the book was published in 2009, the article in Google Scholar shows publication date as 2018. Moreover, one notes that while MLA format, for example, requires that each word of the titles of the article or the book be capitalized (except articles, prepositions, or conjunctions, in these citation recommendations) all elements of the title for all the styles are in small letters, except the first word of the title. In other words, titles are written in a style of APA for the rest of the styles (Harvard, Chicago, Vancouver and MLA). The implication is that copying this reference and using it as it does nothing short of spreading these reference errors from one publication to another (Harzing, 2002; Gabriel, 2010).

In another example, Google Scholar's citation instruction for a newspaper article I used in this study "Gabriel, 2010" was incomplete in terms of APA style of newspaper referencing. I present the Google Scholar's citation for the article in Figure 5 for illustration.

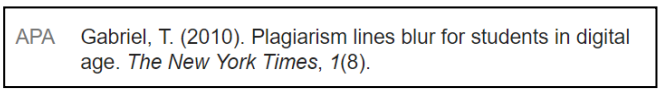


Figure 5. Google Scholar's instruction for citing Gabriel (2010)

Source:
https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=Plagiarism+lines+blur+for+students+in+digital+age&btnG=#d=gs_cit&u=%2Fscholar%3Fq%3Dinfo%3AKM2YYvlazXUJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Den

In Figure 5, the month of publication of the article is not given nor the website where readers can find it. Instruction is therefore non-compliant with APA Style, which states that citing newspaper article should involve writing its author's surname, a comma, initials separated by full stops, comma, the year and month of publication in parentheses, separated by a comma. The next item is title (in small case except the first word of the title and proper nouns) followed by the name of the newspaper in italics. Final item are page numbers introduced by "pp" or the website in which the article exists, and possibly the date of retrieval. The sample of

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citing newspapers article according to APA is given in Figure 6.

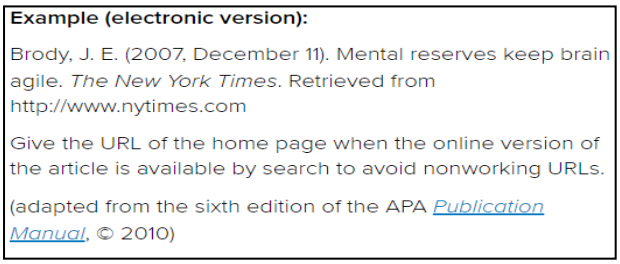


Figure 6. Recommended APA's Citation of newspaper's article

Source: https://www.apastyle.org/learn/faqs/cite-newspaper

Similarly, I have observed that some specific journals instruct authors how to cite articles on their websites in a style that contradicts the famous academic citations guidelines they purport to follow. I demonstrate this using the article of Peters (2000) which I used in this paper from the website of the International Journal of Research in Open and Distributed Learning (IRRODL). While the journal claims to be following APA citation, it instructs its user to cite this article as shown in Figure 7.

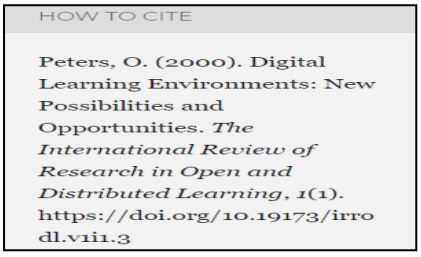


Figure 7. APA Citation instructions for Peters (2000) on the webpage of IRRODL journal

Source: http://www.irrodl.org/index.php/irrodl/article/view/3

Despite that elements of this article are well-arranged in the given citation recommendation, one notes that each keyword in the title of the article starts with a capital letter, whereas, APA, it claims to follow, requires that only the first word and the word after the colon be written in capital letters. Interestingly, the article also features in Google Scholar page with a different citation recommendation. Figure 8 demonstrates.

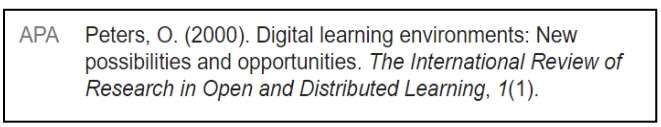


Figure 8. APA Citation instruction for Peters (2000) in Google Scholar

Source: https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=digital+learning+environment+peters&btnG=#d=gs_cit&u=%2Fscholar%3Fq%3Dinfo%3A5sKM4rX62XQJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Den

In comparing these two citation recommendations, which allegedly all follow APA style, one notes that the details are different in the two instructions. One notes, for example, that whereas the journal's website gives the website of the article, Google Scholar does not. There is also a difference in the use of letter case in the title between the Google Scholar and the journal's website's recommendations, which confuses users. One also notes that there are no page numbers as required by the APA citation guidelines. This is however justifiable considering that online articles do not have page numbers. The implication is however that the guidelines still stipulate some requirements, which are quite unrealistic in the present time.

The argument I am making in this paper is that these ready-made references in the database or by software are not often as correct as it would have been expected. As a result, users are still required to be accustomed to citation guidelines so that they can identify errors in them and correct them accordingly.

Is plagiarism and proper referencing error solvable?

The problem of referencing (as a representative of other educational problems) is not likely easily solvable by any technology or whatsoever in the near future. Foremost, it is because attitudes about plagiarism and abidance to styles greatly vary among scholars. Gabriel (2010), for example, demonstrates that views on plagiarizing significantly differed between professors and students who were caught with the copying other peoples' work without acknowledgement. That is, whereas, lectures put much value on crediting sources and abiding by style guide for citations, students did not consider neglecting these requirements a serious misdeed. Gabriel (ibid) attributes the indifference of students to plagiarism to the context in which they have grown up; i.e. where sharing music, images and notes on tubes, forums and applications is a common practice. Wilks & Spivey (2004) who investigated the views of editors and authors on the importance of reference list accuracy also discovered that while majority still considered it important, a significant number did not put much value on it. The underlying point is that opinions on plagiarism are not uniform among scholars as of today.

In my personal experience, as an academic in higher learning institutions, editor and reviewer of academic documents, I also observe that academics are not committed to following citation guidelines. I observe that in almost every journal article, proposal, dissertation or thesis I reviewed, authors of the documents would err in citing sources or in

documenting them strictly by the applicable guideline. The reason for the tendency is not justifiable considering that listing sources does not need intelligence but commitment to following the guidelines (Rakhshan, 2012, p. 158), which these academics had encountered in many lower levels of education before joining postgraduate programmes. Besides, most universities frequently organize article writing seminars and academic workshops in which the importance of proper citation and referencing are underscored. Additionally, the authors have writing guidelines, study manuals and academic books – whose one of the popular topic is citation and referencing. As well, internet, which almost every of these authors have access to today, have uncountable guidelines and notes on citation and listing sources. Further, some of the documents I encountered involved multiple academics (editors, reviewers, supervisors) who would have checked and helped the authors to correct reference errors therein. In this backdrop, it appears to me that most academics of different backgrounds do not consider abidance by citation and referencing guidelines an important activity in writing process. Put lightly, the trend demonstrates that the academics of today do not believe in full compliance with the referencing guidelines. They are seemingly committed to imitating styles, not duplicating them – going by the observation that they show efforts such as underlining some elements or italicizing them, arranging elements of reference list, but not strictly in line with the convention they claim to follow. Already, Wilks & Spivey (2004) had observed that "only a small minority of editors reported that their journals had a formal procedure for checking reference accuracy" This is supported by Basak's (2016, p. 107) observation that many authors did not follow journal instructions in terms of citations and referencing in 315 references he studied from 20 articles in 2016. The findings imply that ethical values and conventions we have, for a long time, assigned referencing phenomenon are currently on trial.

DISCUSSION

Proper citation and referencing is still of paramount importance in academic works. However, abidance by citation guidelines has continued to be a challenge among academic authors, supervisors, proofreaders, editors, and examiners for a long time now. Sweetland (1989, p. 291) see that the problem increased from the mid-nineteenth century to the present – likely because of the change of economic order which might have as well changed people's perception of the world. Literature review has shown that the problem is very big in academic circles and will likely continue to stay. I equally observe from experience that authors no longer care about accuracies of citations and references. I see a tendency where authors only try to impress academic gate keepers in issues pertaining to citation and referencing, i.e. trying to underline or italicize some elements of a reference list, using punctuation marks and arranging elements of reference list in a close order to the one prescribed in the imitated style, but without a commitment to attain accuracy. It is puzzling why academics do not give this element its deserving weight now. Harzig (2002, 144) links the tendency to increased pressure for academics to publish; combined with increased number of students to teach. Sweetland (1989) attributes the inaccuracies to lack of training on the subject – and I would say that training is very important to academics in writing academic documents that meet the expected standards. I would add that moral campaign is more important than training in realizing this objective. This is because in the researcher's experience of reading postgraduate students' works at universities, that many authors who do not comply with the citation guidelines had attended several postgraduate writing seminars and had taken research courses (in which citation and referencing is a default topic). It is therefore more likely that many academics have developed a tendency to put much effort on the subject matter and less on style and format of the documents. The other reason can be that the citation guidelines have continued to be very complex in a simplified world. One wonders, for example, why we should today want that authors' name be in a certain order, titles be in a certain letter case, some sections be underlined, italicized or bolded. Moreover, why should we want to know a city, a publisher, volume or page number of a source? Likewise, why should we direct the use of a colon between a publisher and the city instead of let' say a comma, or a full-stop? The questions come in consideration that both physical libraries and digital libraries use sophisticated search engines to track documents in their collections or archives; and in most of these archives, the title of the publication or the author can be enough. In Academia.edu for example, one can find a source by name, by type of the source, by university, by department, by job or by research interest – the parameters, which are unfortunately not captured in the existing referencing guidelines. Moreover, one can search sources by only their titles in databases such as Google Scholar and still retrieve better results. With regard to indicating page numbers, articles published online have no page numbers, which the traditional citation guidelines still demand. Page numbers of articles published online would normally start from one, whereas, the article in the print format might be in the middle of the journal or a book. As a result, there is a contradiction between the norms and practice in this area. In his paper of 1989, Sweetland had already seen stipulations in the citation guidelines, which led to many errors, yet did not affect the tracking of the documents in libraries. Today, technology have even rendered more traditional citation requirements obsolete. This is to suggest that parameters of locating sources have

changed and that the style and requirements have to change as well.

Further, one wonders, for example, why would mixing APA and MLA style in one reference list be a bad thing, whereas, mixing approaches has always attracted good reputation in issues pertaining to research. It is even striking as to why the styles are being upgraded every time in terms of so and so edition; and that emphasis is put by some educators to follow the new edition, even where the lower edition still works equally well for the purpose in question. The fact is that changing edition every now and then creates a gap of knowledge between the old and the new learners (in a college case, professors and students). The professor might be knowledgeable of the old guideline; meanwhile, the student might be abreast with the new edition of the guideline, hence unnecessary clash of knowledge.

We have seen different technologies and their bright future in militating against inaccuracies in documenting sources in academic work. Overall, they have made a satisfactory progress; and with some improvement and innovations, they are more likely to perform better in future. The problem is however the growing negative attitude towards the concept of citation and referencing. With such attitudes, no technology can reverse the trend of inaccuracies in citations and references. That is, the technologies may exist, yet users may shun using such technologies to do what they are supposed to with them. It will be interesting for example to conduct a study on the preference of citation and referencing software by postgraduate students in different colleges and fields to inform the trend of the practice.

CONCLUSION

This article assessed the achievements of digital technologies in addressing longstanding education problems through the lens of citation technologies. In this direction, I have confirmed the existence of several digital technologies for achieving accuracies in citations and references. I have also shown that the technologies still have several shortcomings such as being semi - automatic or limited in their scope of operation. Overall, these technologies have so far demonstrated a great potential in alleviating the problem of poor citation and referencing, at least at the mechanical level of the phenomenon. Despite the good progress made by the technology and its promising future, I have confirmed a continuing trend by academics to shun abidance by citation guidelines fully. I have described how academics produce citations and references that are close to what are recommended by the citations manuals without a commitment to achieve accuracy. This is therefore a paradigm shift that might call for the review of the manuals to match the perspectives of users and context of use (i.e. "adaptation and evolution of the concept to new environmental conditions while retaining its core identity" Anderson, 2013, p. 55). The existing guidelines would, for example, be simplified to make them easy to follow by users. I see for example that the existing technology calls for the removal or substitution of some elements, which are currently part of references. Such changes might improve citation accuracy as it happened when similar norms and style were changed at the end of World War I1 (see, Sweetland, 1989, p. 294). With regard to the continuous disregard of citation and referencing manuals, moral boosting among academic writers on the primacy of these guidelines should be the area of emphasis in academic writing trainings. That is, scholars at different levels should constantly be encouraged to abide by writing ethics when writing scientific documents. It is only by upholding honesty that we can resolve this old problem of plagiarism in academic writing with the help of technologies.

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