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Abstract

The purpose of this paper is to discuss changes in the roles of librarians against the backdrop of emerging technologies. Through reflection on practice drawn from the author's thirty years in librarianship, this paper explores the evolving role of librarians in the constantly developing technological environment and demonstrates how librarians can combine information resources, technology and research assistance in these constantly changing spaces. It also explores how technology enhances the role of the librarian with specific reference to ChatGPT. The author stressed the need for library courses for credit to allow for feedback, assessment, and critical thinking. The need for continuing professional development (CPD) for Librarians was highlighted. Additionally, areas such as Scholarly Publishing, Metrics and Analytics, Academic Integrity, and Intellectual Property were identified as areas of focus for the 21st century Librarian. This study is limited to changes in roles as a result of emerging technologies which impact librarians. It is set in the Caribbean. This paper is relevant for librarians,

regardless of their geographical location, who are also required to be fluid, keep on the cutting edge, adapt and adopt to deliver service in the face of constantly advancing technology.

This paper is a reflection on an original experience from a Caribbean territory. It also explores recent developments in technology, more specifically ChatGPT and its impact on the roles of librarians. It provides contributions to the ongoing discourse on the evolving role of the librarian, from a different perspective.

Introduction

This viewpoint explores the evolving role of the academic librarian in today's constantly developing technological environment. Reflecting on my years of experience in librarianship in Trinidad, during the period 1990 to present, I will explore the evolution of the librarian's role over that period against the backdrop of the developing technology. I will do so by sharing how I facilitated access to information resources, provided research assistance to patrons and networked with stakeholders. I will also explore how the role of the librarian is enhanced in the face of emerging technologies, with specific reference to ChatGPT. In so doing, I will apply the symbolism of the term *super* to the librarian against the backdrop of the rapidly changing technological realities, and the impact on traditional functions of an academic librarian.

The term *super* recalls one of my favourite television characters, Superman. He has speed and foresight. Almost godlike, he sees, hears, and knows all. He is expected to be everywhere at any time. He is in demand and constantly and seamlessly moves from one environment and activity to another. Missiles and weapons change in the middle of combat as opposition forces seek to invalidate him. Yet he is unstoppable. He has a mission, and he gets

it done regardless of the challenges encountered. Permit me to link the symbolism to the librarian.

For the librarian, the term super connotes the ability to go above and beyond traditional expectations to recognise, adapt, and effectively function in rapidly changing and unpredictable contexts. This is particularly applicable in today's fast developing technological environment which has contributed to the continuous evolution of the librarian's role.

Momoh and Folorunso (2019) delineated the traditional and evolving role of librarians. They highlighted three major roles of the *#SuperLibrarian*. These roles are custodian, guide, and P.R. officer. I also concur with Tanawade (2011) who posited that given the technological realities of the 21st century, the term gatekeeper captures the heightened custodial role of the librarian in the 21st century. In this paper, I equate the role of custodian/gatekeeper with the acquisition, processing, and dissemination of information; the role of guide with user instruction, reference queries and other such services which users need; and the role of PR officer with networking with various stakeholders. Momoh and Folorunso (2019) further identified the roles as they were undertaken in the 19th and 20th century. They posited that in the 19th century the custodian selected and cared for physical materials, while in the 20th century, they required special knowledge to evaluate, attain licences and provide access digital and electronic materials, databases and physical materials. Whereas in their roles as guides in the 19th century they needed help users find material, in the 20th century that assistance was expanded to include "educating patrons about the use of digital library services and generalized digital literacy and providing virtual services...often through library websites" (p.5). In the 19th century, the PR Officer maintained "connections with community institutions and other libraries" (p.6), whereas in the 20th century it was also necessary that they "developed relationships with database managers to increase access to materials" (p.6).

These areas illustrate the progress of the librarian's role overtime in changing technological contexts. Reflecting on my experience, I will further explore this evolution in the 21st century with a focus on these three roles, before turning my attention to ChatGPT. But first, I will reflect on the evolution of the Librarian's role over time.

The evolution of the librarian's role over time

Over the course of my 30 years in librarianship gained in schools and university libraries in Trinidad, I have witnessed the disappearance of the likes of the accession book, library card, book pocket, patron pocket, date due slip, manual overdue lists, processing and loans, catalog cards, catalog cabinets, and other such traditional library tools. I have seen the joy of the introduction of the ISIS software, floppy drives, pop mail and graphical user interface, then their replacement by CDrom drives, jukeboxes and virtual drives, Web 2.0, electronic books via Netlibrary, and barcodes.

Then, in came RFID and self-check loan services. Print indexes gave way to abstracts available via CD; then, came electronic access to limited full text material. Paid subscriptions gradually took over. Individual databases expanded into multidisciplinary databases and subject specific databases via paid subscriptions. Discovery and federated searches became the transportation to navigate patrons through various platforms to which libraries subscribed. The information superhighway was becoming monstrous. Open access, digital commons, and OERs were not to be left out. Systems were crashing under the weight. Cloud storage provided relief. Amid the changing electronic environment, *#SuperLibrarian* also had to field obstacles and projectiles from fake news as well as intellectual property and copyright infringement in unsecure online spaces. Academic Integrity was an upgraded watchword, as patrons were inundated with readily accessible, but not always legal, electronic PDF and digital resources.

By my 30th year in librarianship, in 2020, COVID-19 served to fast-forward what was hitherto visions and plans of digital transformation. Once again, the *#SuperLibrarian* had to adapt in the face of new realities. I found that my space was now fully virtual. My use of electronic communication tools was heightened as I sought to deliver service and maintain my connection with patrons and stakeholders. I was intentional in disseminating online library guides on finding and locating information and accessing services. I established my online presence via social media and social networking sites. I refocussed, retooled, and retrained via various professional development workshops, especially with regard to the effective utilisation of social networking sites, as well as fully remote teaching. I embraced the use of the e-learning platform blackboard collaborate in the delivery of information literacy instruction. I facilitated both synchronous and a-synchronous sessions in the teaching and learning process. I utilized technology in my classes and other online sessions. This included but was not limited to online quizzes, online discussion forums, YouTube videos and creative online tools such as padlets, journaling and online games.

The librarian as custodian/gatekeeper, guide, and public relations officer in the current technological environment

Reflecting on my experience, I will explore how I facilitated access to information resources (custodian/gatekeeper), provided research assistance to patrons (guide) and networked with stakeholders (PRO). Building on the 19th and 20th century realities provided by Momoh and Folorunso (2019) I will provide a view of the 21st century based on my experience.

Access to Information Resources (Custodian/Gatekeeper)

As a 21st century custodian/gatekeeper, in addition to caring for physical materials (19th century) and evaluating, attaining licences, and providing access digital and electronic

materials, databases and physical materials (20th century), my provision of access to information resources included the incorporation of federated searching and discovery systems. These tools assisted users in navigating the constantly expanding information superhighway. I also acquired special knowledge in the use of Application Programming Interface (API) to bring databases into the online learning system for easy access and retrieval by both students and lecturers.

Research Assistance (Guide)

By the 21st century, in addition to helping users find material (19th century) and providing digital literacy (20th century), I had to provide guidance to patrons with regard to predatory journals. Also, by the 21st century, Open access (OA) and Open Educational Resources (OER) made scholarly research more accessible to patrons. I now had to acquire additional knowledge about copyright and licenses in open access environments, as well as additional knowledge on these scholarly communications. This I acquired through online professional development courses, webinars, and workshops.

Additionally, by the 21st century I was assisting faculty in showcasing their research. I guided them in the development of scholar profiles to make their research and publications visible and accessible through the institutional repository. Additionally, I provide guidance on bibliometrics and altmetrics.

Networking with stakeholders (PRO)

In addition to maintaining connections with libraries and the community (19th century) and developing relationships with database providers (20th century), by the 21st century I found it necessary to market and promote the electronic resources of the library to our library community/patrons especially given the expense involved in acquiring them. This was done via technological means which included but were not limited to library electronic flyers, social media posts and other online promotions. I believe that being a marketer is one of the evolving

roles of the 21st century librarian. I calendared an annual marketing initiative for the library. One of the activities involved an invitation to patrons to bring their electronic devices to receive training in the use of databases and other electronic services provided by the library. They also participated in games both virtually and onsite.

How the roles of librarians are enhanced in the face of advances in technology including ChatGPT.

Rapid advances in technology over the last century have fuelled debates and given rise to various positionalities on the role of librarians. Additionally, some academicians, students, and other patrons even question the relevance of libraries and librarians in this fast-paced and constantly developing technological age and space. Google became the student's best friend and has been touted as an alternative to the library. Now ChatGPT, although not the first, is the latest AI challenge to the *#SuperLibrarian*.

ChatGPT

ChatGPT has been described as an AI chatbot that:

uses a combination of unsupervised pre-training and supervised fine-tuning to generate human-like responses to queries and provide responses to topics that resemble that of a human expert... ChatGPT can be extensively used for NLP tasks such as text generation, language translation, and generating answers to a plethora of questions, engendering both positive and adverse impacts. (Yogesh K. Dwivedi, *et al.*, 2023, p.3)

When asked, "Can ChatGPT replace librarians?" The response according to OpenAI's ChatGPT was:

It cannot fully replace librarians and the important role they play in supporting their communities. Librarians not only help people find information, but they also curate and manage collections, provide guidance on research and information literacy, offer programming and events, and serve as a community resource for education and learning. They have a wealth of knowledge and expertise that goes beyond simply answering questions, and they play an important role in promoting literacy, intellectual freedom, and access to information. While [OpenAI] can assist with certain aspects of what a librarian does, [it] cannot fully replicate the human touch and personalized service that they provide. Librarians bring a wealth of knowledge, experience, and interpersonal skills to their work that cannot be replicated by a

machine. So, while chatbots can certainly complement the work of librarians, they cannot fully replace them. (OpenAI, n.d)

As I saw my response being generated, and after reading the full response, I recognized that although it synthesized it did not conceptualize. The synthesized response was as good as the research string entered. As with the search of other databases different strings generated different responses. Search queries need to be properly conceptualized, and strategies need to be specific since ChatGPT returns responses based on patterns of texts from the internet. The role of the librarian is heightened in the face of these challenges brought on by this emerging technology. This is especially significant given findings from a very recent online survey of 290 students which revealed that over 80% of college students either made use of or would be very interested in making use of ChatGPT in the generation of assignments for grading in academic writing. The researchers, (Dawa *et al.*, 2023), stated the need for awareness programs to raise students' "sensitivity about the need for cautious use of textual content generated by AI and the potential consequences of doing so" (p.16). Who is more qualified to do so than the #SuperLibrarian? Additional focus will need to be placed on areas such as academic integrity, plagiarism and critical thinking. Additionally, in a recent webinar held March 2023 and entitled *Is ChatGPT Going To Take My Technical Writing Job?* the relevance and evolving role of the librarian was highlighted by Mike Iantosca who made the prediction that:

Pretty soon, when people realise that they need taxonomies, anthologists and people that can do knowledge graphs, [the curriculum of] library science majors [is] going to look like the NFL draft for undergrads. There are just not going to be enough [librarians] out there because [ChatGPT] just opened up new roles. Who's better at content than [librarians]—the content professionals?

Other Technologies

Rather than supplanting the traditional, technology is instead enhancing the roles of librarians (Holland, 2015). It put a new spin on traditional responsibilities of acquiring, processing, and disseminating information. Advances in technology enhanced my roles as custodian/gatekeeper, guide, and PR Officer from the start of the 21st century to the present in

the following areas: automation of the library functions; networking and negotiating with database managers for the acquisition of web services; electronic databases, electronic journals and electronic books; acquiring special knowledge with respect to APIs to facilitate the linking of Library Management Systems and Learning Management Systems in the provision of access to patrons; providing access to a variety of resources via federated searches and discovery platforms; delivering information literacy sessions through embedded blended courses via the then emerging zoom technology; providing remote access through ezproxy; utilising barcodes for the provision of library services such as loans, photocopying, printing, holds and recall, before accommodating the use of RFID; self-checks services; digitization of resources; and real-time chat via ask-a-librarian. This is by no means an exhaustive list of the technologies with which I interacted on a daily basis. The role of the librarian is as dynamic as the technology which will continue to develop. Doubtless, there are skills the 21st century #SuperLibrarian needs to possess in fulfilling their enhanced roles.

21st century skills for the #SuperLibrarian

Refocussing, retooling, and retraining are imperatives for the #SuperLibrarian. In this regard, I will focus on skills that the librarian should possess as their roles evolve in the midst of the technological realities of the 21st century. I draw reference to three skills identified by Ugwu and Ezeani (2012). While the authors saw these skills as necessary to position LIS graduates towards successful entrepreneurship ventures, I felt they were necessary skills that librarians should possess in the 21st century, especially against the backdrop of the abovementioned realities and particularly as I reflect on my years of experience in the library environment, over fifteen of which were spent as a library director. These skills are information technology skills, information literacy skills and managerial skills (for library managers). Additionally, Oyelude and Akin-Fakorede (2019), conducted a study to gauge the skills needed for future service delivery in libraries. While their research was focussed on STEM Libraries,

they also found the IT skills, Technology Skills, and Ability for Critical thinking to be important skills for the 21st century librarian. Further, Ozonuwe (2019) alluded to the need for the 21st century librarian to possess computer literacy skills.

The reality is that digitization and the internet have made relevant content more accessible for patrons, hence, information technology skills are necessary to provide access to electronic and physical materials, to maintain specialized knowledge of digital databases, to evaluate electronic materials, and to acquire licenses. The *#SuperLibrarian* must be skilled in managing databases and facilitating effective information retrieval utilising a range of software and technology tools.

Critical thinking skills is a core feature of effective information retrieval and thus, alongside information technology skills, is necessary for effective service delivery for the 21st century librarian. The need for excellent library instruction and literacy skills is heightened in this age of fake news, false information, AI, and ready access to information via the internet. More specifically as a 21st century librarian, I have always been an advocate for credit-bearing library courses. As posited by Alwan *et al.* (2021), this allows for content to be created by librarians and not be largely dependent on the preferences of faculty. Credit-bearing courses will allow for feedback, assessment, and the engendering of critical thinking skills. It is my belief that the *#SuperLibrarian* must not only possess critical thinking skills but must also seek ways of developing critical thinking skills in patrons, not just through on demand or stand-alone sessions, but solidified through credit-bearing courses. The 21st century librarian should also utilise technologies in the teaching and learning process, some of which I shared above.

As a library manager, I reflect on managerial skills which I needed to adapt to the changing realities of the 21st century. Particularly critical in my experience was the navigation of the technological realities with limited budgets. I needed traits of tact and diplomacy to sell ideas to administration. It is important that administration buy into and support a forward-

thinking vision for the library. The technological environment within which the library operates incurs a heavy budget. Buy-in from administration is particularly significant to keep the plans of the library at the forefront of the strategic plan of the institution. This would mitigate against cuts to the library's budget. Buy-in from administration is necessary for the librarian to adapt in the delivery of service in a changing technological environment.

The contemporary/future-oriented library manager also needs to demonstrate the managerial skills of networking and negotiation. Maintaining connections with community institutions and other libraries is critical. Indeed, networking with other professionals facilitates assistance when fiscal constraints prevent access to expertise and needed technology. Negotiating with vendors for discounts, payment plans, and waivers is par for the course. *The #SuperLibrarian* also needs to set and reset priorities and break up long term plans into realistic and measurable short-term goals where applicable.

Conclusion

As the format of the content changes over time, the role of the *#SuperLibrarian* – keeper of the scrolls, information manager, information specialist, content manager – will continue to evolve. Our relevance is hinged on the fact that our profession is not static, but dynamic. We adapt and evolve in the delivery of services to various publics in a constantly changing climate. As long as there is knowledge being created our mission will persist. Our roles, however, will play out differently. Librarians must be as fluid as the profession demands. Continuing Professional Development (CPD) is also a must for the *#SuperLibrarian* to remain on the cutting edge of the profession. In addition to ongoing training in the main functional areas of the library, I deem workshops and courses in Scholarly Publishing, Metrics and Analytics, Academic Integrity, and Intellectual Property, necessary for the 21st century librarian.

Permit me to propose an acronym as, like my favourite superhero, Superman, Librarians continue to use their abilities for the benefit of our patrons and information seekers. Let us

persist in the fight against fake news and academic dishonesty, inclusive of plagiarism. Let us engage in continuous professional development to maintain our relevance and protect our profession. As *#SuperLibrarian*, let us continue to EVOLVE in our constantly changing contexts:

Experiment/Explore

Venture out

Be Optimistic

Leave (your comfort zone)

Be a Visionary

Execute

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